

# The American Journal of CARDIOLOGY®

Volume 35

January to June 1975

## Editor-in-Chief

**SIMON DACK, MD, New York**

## Senior Assistant Editors

**RAYMOND HARRIS, MD, Albany, N.Y.**  
**LESLIE A. KUHN, MD, New York**

## Managing Editor

**RUTH R. OHMAN**

## Associate Editors

**EUGENE BRAUNWALD, MD, Boston, Mass.**  
**E. GREY DIMOND, MD, Kansas City, Mo.**  
**GEORGE C. GRIFFITH, MD, Los Angeles**

## Assistant Editors

**IRA J. GELB, MD, New Rochelle, N.Y.**  
**MELVIN KAHN, MD, New York**

## Assistant Managing Editor

**GABRIELLE HAYES**

## Publisher

**LOUIS F. LE JACO**

## EDITORIAL CONSULTANTS

CRAWFORD W. ADAMS, MD, Nashville  
FORREST H. ADAMS, MD, Los Angeles  
ALBERTO BENCHIMOL, MD, Phoenix  
S. GILBERT BLOUNT, Jr., MD, Denver  
SIDNEY BLUMENTHAL, MD, Miami  
ROBERT A. BRUCE, MD, Seattle  
AGUSTIN CASTELLANOS, Jr., MD, Miami  
ERNEST CRAIG, MD, Chapel Hill, N. C.  
JAMES E. CROCKETT, MD, Kansas City, Mo.  
ANTHONY N. DAMATO, MD, Staten Island  
HAROLD T. DODGE, MD, Seattle  
LEONARD S. DREIFUS, MD, Philadelphia  
MARVIN I. DUNN, MD, Kansas City, Kan.  
JESSE E. EDWARDS, MD, St. Paul  
DONALD B. EFFLER, MD, Cleveland  
MARY ALLEN ENGLE, MD, New York  
HARVEY FEIGENBAUM, MD, Indianapolis  
CHARLES FISCH, MD, Indianapolis  
NOBLE O. FOWLER, MD, Cincinnati  
RAY W. GIFFORD, Jr., MD, Cleveland  
ALLAN V. N. GOODYER, MD, New Haven  
KALMAN GREENSPAN, PhD, Indianapolis

DONALD C. HARRISON, MD, Stanford, Calif.  
MICHAEL V. HERMAN, MD, New York  
JAMES C. HUNT, MD, Rochester, Minn.  
J. WILLIS HURST, MD, Atlanta  
THOMAS N. JAMES, MD, Birmingham  
MELVIN P. JUCKINS, MD, Loma Linda, Calif.  
ARNOLD M. KATZ, MD, New York  
JOHN D. KEITH, MD, Toronto  
HARVEY G. KEMP, Jr., MD, New York  
JOHN W. KIRKLIN, MD, Birmingham  
CHARLES E. KOSSMANN, MD, Memphis  
JAMES J. LEONARD, MD, Pittsburgh  
HAROLD D. LEVINE, MD, Boston  
ROBERT S. LITWAK, MD, New York  
DEAN T. MASON, MD, Davis, Calif.  
RASHID A. MASSUMI, MD, Davis, Calif.  
DWIGHT McGOON, MD, Rochester, Minn.  
HENRY D. McINTOSH, MD, Houston  
ANDREW GLENY MORROW, MD, Bethesda  
ARTHUR J. MOSS, MD, Los Angeles  
JOHN O. PARKER, MD, Kingston, Ontario, Canada  
JOSEPH K. PERLOFF, MD, Philadelphia  
RICHARD L. POPP, MD, Stanford, Calif.

WILLIAM C. ROBERTS, MD, Bethesda  
KENNETH M. ROSEN, MD, Chicago  
MAURICIO B. ROSENBAUM, MD,  
Buenos Aires, Argentina  
JOHN ROSS, Jr., MD, La Jolla, Calif.  
PHILIP SAMET, MD, Miami Beach  
LEONARD SCHERLIS, MD, Baltimore  
ROBERT C. SCHLANT, MD, Atlanta  
ARNOLD SCHWARTZ, PhD, Houston  
BERNARD L. SEGAL, MD, Philadelphia  
ARTHUR SELZER, MD, San Francisco  
RALPH SHABETAI, MD, Lexington, Ky.  
EDGAR SOWTON, MD, London  
JAMES F. SPANN, Jr., MD, Philadelphia  
LEONARD STEINFELD, MD, New York  
BORYS SURAWICZ, MD, Lexington, Ky.  
H. J. C. SWAN, MD, Los Angeles  
NORMAN S. TALNER, MD, New Haven  
L. H. S. VAN MIEROP, MD, Gainesville, Fla.  
RICHARD VAN PRAAGH, MD, Boston  
ARNOLD M. WEISSLER, MD, Detroit  
NANETTE K. WENGER, MD, Atlanta

## PUBLICATIONS COMMITTEE, AMERICAN COLLEGE OF CARDIOLOGY

JOHN ROSS, Jr., MD, San Diego  
Chairman

W. GERALD AUSTEN, MD, Boston  
LIONEL M. BARGERON, Jr., MD, Birmingham  
SIMON DACK, MD (ex officio), New York

PETER L. FROMMER, Bethesda  
D. LUKE GLANCY, MD, New Orleans  
DOUGLAS P. ZIPES, Indianapolis

DUN • DONNELLEY PUBLISHING CORPORATION  
666 Fifth Avenue, New York, New York 10019

**Volume 35 / Copyright © 1975**

**Dun - Donnelley Publishing Corporation  
666 Fifth Avenue, New York, New York 10019**



All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage retrieval system, without written permission of the copyright owner.

**Printed in the United States of America**

JANUARY 1975

# CLINICAL STUDIES

- 1 Left Ventricular Function in Patients With and Without Myocardial Infarction and One, Two or Three Vessel Coronary Artery Disease. Roger E. Moraski, Richard O. Russell, Jr., McKamy Smith and Charles E. Rackley
- 11 Improvement of Reduced Left Ventricular Diastolic Compliance in Ischemic Heart Disease After Successful Coronary Artery Bypass Surgery. Richard R. Miller, Anthony N. DeMaria, Ezra A. Amsterdam, Mary M. Mailander, Robert Zelis, Arthur J. Lurie and Doan T. Mason
- 17 Mechanism of the Bradycardia During Coronary Angiography. Richard J. Frink, Bruce Merrick and Harold M. Lowe
- 23 H-V Interval in Patients with Bifascicular Block (Right Bundle Branch Block and Left Anterior Hemiblock). Clinical, Electrocardiographic and Electrophysiologic Correlations. Pablo Denes, Ramesh C. Dhir, Delon Wu, Ruben Chuquimia, Fernando Amat-y-Leon, Christopher Wyndham and Kenneth M. Rosen

# EXPERIMENTAL STUDIES

- 30 Subendocardial Ischemia Provoked by Tachycardia in Conscious Dogs with Coronary Stenosis. William A. Neill, John Oxendine, Nancy Phelps and Richard P. Anderson
- 37 Effects of Unipolar Cathodal and Bipolar Stimulation on Vulnerability of Ischemic Ventricles to Fibrillation. Wolfgang Merx, Jack Han and Myung S. Yoon

# PEDIATRIC CARDIOLOGY

- 42 Double Outlet Right Ventricle (S,D,L) with Subaortic Ventricular Septal Defect and Pulmonary Stenosis. Report of Six Cases. Richard Van Praagh, Carlos Pérez-Trevino, James L. Reynolds, C.A.F. Moes, John D. Keith, Douglas L. Roy, Christian Belcourt, Paul M. Weinberg and Lucy F. Parisi
- 54 Echocardiography in Atrioventricular Canal Defect. A Clinical Spectrum. Daniel R. Pieroni, Eileen Homcy and Robert M. Freedom
- 59 Cor Triatriatum: Study of 20 Cases. José Marín-García, Rajendra Tandon, Russell V. Lucas, Jr. and Jesse E. Edwards

# REPORTS ON THERAPY

- 67 Clinical Implications of Warfarin Interactions with Five Sedatives. John A. Udall

# REVIEWS

- 72 Hemophilus Aphrophilus Endocarditis: Review of 23 Cases. Samuel K. Elster, Leonard M. Mattes, Burt R. Meyers and Roy A. Jurado

# SPECIAL ARTICLE

- 80 Cardiovascular Investigations and Fuzzy Sets Theory. Daniel Kaimanson and H. Fred Stegall

# DIAGNOSTIC SHELF

- 85 Precordial Heave Due to Tricuspid Regurgitation. Charles B. Upshaw, Jr.
- 89 Nonobstructive Hypertrophic Cardiomyopathy Mimicking Mitral Stenosis. Documentation by Echocardiography, Phonocardiography and Intracardiac Pressure and Sound Recordings. Michael R. Smith, Neil S. Agruss, Norman I. Levenson and Robert J. Adolph

# CASE REPORTS

- 97 Primary Cardiomyopathy in Identical Twins. Alfonso Anselmi, José Angel Suarez, Guillermo Anselmi, Frederico Moleiro, Claudia de Suarez and Victor Ruesta
- 103 Internal Mammary Arteriovenous Malformation with Communication to the Pulmonary Vessels. Edward M. Cohen, Donald E. Loew and Joseph V. Messer
- 107 Progressive Pulmonary Vascular Disease After Surgical Correction (Mustard Procedure) of Transposition of Great Arteries with Intact Ventricular Septum. Ronald Rosengart, Michael Fishbein and George C. Emmanouilides

# EDITORIALS

- 112 Radionuclides and the Patient with Coronary Artery Disease. Barry L. Zaret and Lawrence S. Cohen

# SPECIAL DEPARTMENTS

- 116 Letters to the Editor  
Surgical Correction of Double Outlet Right Ventricle—Kawashima and Doyle  
Right Ventricular Infarction—Schwartz and Cohn
- 117 Abstracts of Papers from the 24th Annual Scientific Session of the American College of Cardiology, February 10 to 13, 1975, Houston, Texas.
- 180 Author Index: Abstracts
- 184 Subject Index: Abstracts
- 194 American College of Cardiology News
- 196 Reviews in Cardiology

# CONTENTS: VOLUME 35

FEBRUARY 1975

## CLINICAL STUDIES

- 199 **Atrioventricular and Intraventricular Conduction in Hyperkalemia.** Tali Bashour, Irene Hsu, H. Joel Gorfinkel, Rajasekaran Wickramasekaran and Jorge C. Rios
- 204 **Blood Platelet Response to Plasma from Patients with Ischemic Heart Disease.** Irwin J. Schatz and Irwin Gross
- 211 **Coronary Arteriographic Findings in 1,000 Women Under Age 50.** C. Charles Welch, William L. Proudfit and William C. Sheldon
- 216 **Radiation-Related Pericarditis.** Robert G. Martin, John C. Ruckdeschel, Paul Chang, Roger Byhardt, Richard J. Bouchard and Peter H. Wiernik

## SYMPOSIUM ON THE EFFECTS OF SURGICAL TREATMENT ON THE NATURAL HISTORY OF ACQUIRED HEART DISEASE. PART II. AORTIC AND MITRAL VALVE DISEASE

- 221 **Natural History of Aortic and Mitral Valve Disease.** Elliot Rapaport
- 228 **Long-Term Follow-Up of Isolated Replacement of the Aortic or Mitral Valve with the Starr-Edwards Prosthesis.** Donald A. Barnhorst, Herbert A. Oxman, Daniel C. Connolly, James R. Pluth, Gordon K. Danielson, Robert B. Wallace and Dwight C. McGoon
- 234 **Influence of Surgery on the Natural History of Rheumatic Mitral and Aortic Valve Disease.** Simon Muñoz, Jose Gallardo, Jose R. Diaz-Gorin and Omar Medina

## EXPERIMENTAL STUDIES

- 243 **Effects of Alcohol on Cardiovascular Performance After Experimental Nonpenetrating Chest Trauma.** A. James Liedtke and William E. DeMuth
- 251 **Effects of Myocardial Hypoxia and Ischemia on Myocardial Scintigraphy.** Norman I. Levenson, Robert J. Adolph, Donald W. Romhill, Marjorie Gabel, Vincent J. Sodd and Leon S. August

## METHODS

- 258 **Ventricular Performance in Patients Based Upon Rate of Change of Power During Isovolumic Contraction.** Paul D. Stein and Hani N. Sabbah
- 264 **Isovolumic Fractional Rate of Change of Power: Its Applicability to Assessment of Ventricular Performance in Patients.** Paul D. Stein and Hani N. Sabbah

## PEDIATRIC CARDIOLOGY

- 271 **Solitary Interruption of the Arch of the Aorta. Clinicopathologic Review of Eight Cases.** M. Renate Dische, Mary Tsai and Harold A. Baltaxe

- 278 **Electrocardiographic Evidence of Left Ventricular Hypertrophy in Otherwise Normal Children. Clarification by Echocardiography.** Joel Morganroth, Barry J. Maron, L. Jerome Krovetz, Walter L. Henry and Stephen E. Epstein

## REPORTS ON THERAPY

- 282 **Electrophysiologic Effects of the Antiarrhythmic Agent Disopyramide Phosphate.** Benjamin Befeler, Agustin Castellanos, Jr., David E. Wells, M. Celeste Vagueiro and Billy K. Yeh

## DIAGNOSTIC SHELF

- 288 **Concealed His Bundle Extrasystoles in Congenital Heart Disease.** Antoine T. Nasrallah, Paul C. Gillette, Charles E. Mullins, Michael R. Nihill and Dan G. McNamara
- 293 **Electrocardiographic Manifestations of Dual Pathways of Retrograde Impulse Conduction in the Human Heart.** Yigal Noy and Peter Fleischmann

## CASE REPORTS

- 299 **Conduction System in Systemic Lupus Erythematosus with Atrioventricular Block.** Saroja Bharati, Domingo J. de la Fuente, Ronald J. Kallen, Yaser Freij and Maurice Lev
- 305 **Systemic Lupus Erythematosus as a Cause of Severe Mitral Regurgitation. New Problem in an Old Disease.** Bernadine H. Bulkley and William C. Roberts
- 309 **Myocardial Infarction Due to Coronary Atherosclerosis in Three Young Adults with Systemic Lupus Erythematosus.** Jose Meller, Cesar A. Conde, Ludwig M. Deppisch, Ephraim Donoso and Simon Dack
- 315 **Bilateral Arteriosclerotic Coronary Arterial Aneurysms Successfully Treated with Saphenous Vein Bypass Grafting.** Charles S. Wilson, Walt F. Weaver and Alan D. Forker
- 319 **Bilateral Nonfistulous Congenital Arterial Aneurysms.** Charles S. Wilson, Walt F. Weaver, E. D. Zeman and Alan D. Forker
- 324 **Aortic Origin of the Left Pulmonary Artery. Variant of Tetralogy of Fallot.** Erwin Robin, Boris Silberberg, Sunilendu N. Ganguly and Konstantinos Magnisalis

## EDITORIALS

- 330 **Prevention of Heart Disease by Control of Risk Factors: The Time Has Come to Face the Facts.** Elliot Corday and Stephen Richard Corday

## SPECIAL DEPARTMENTS

- 334 **American College of Cardiology News**



### CLINICAL STUDIES

- 337 Mechanism of Left Ventricular Outflow Obstruction in Patients with Obstructive Asymmetric Septal Hypertrophy (Idiopathic Hypertrophic Subaortic Stenosis). Walter L. Henry, Chester E. Clark, James M. Griffith and Stephen E. Epstein
- 346 First Heart Sound and Ejection Sounds. Echocardiographic and Phonocardiographic Correlation with Valvular Events. Winfried Walder and Ernest Craigie
- 357 Pericardial Rub. Prospective, Multiple Observer Investigation of Pericardial Friction in 100 Patients. David H. Spodick
- 363 Prolapse of the Posterior Leaflet of the Mitral Valve Associated with Secundum Atrial Septal Defect. Amadeo Betriu, E. Douglas Wigle, Clarence H. Felderhof and Michael J. McLoughlin

### EXPERIMENTAL STUDIES

- 370 Effect of Digoxin on Sinus Nodal Reentry in the Dog. Karlen L. Paulay and Anthony N. Damato
- 376 Effects of Aminophylline on the Threshold for Initiating Ventricular Fibrillation During Respiratory Failure. Leonard N. Horowitz, Joseph F. Spear, E. Neil Moore and Robert Rogers

### METHODS

- 380 Myocardial Imaging with Indium-113m- and Technetium-99m-Macroaggregated Albumin. New Procedure for Identification of Stress-Induced Regional Ischemia. James L. Ritchie, Glen W. Hamilton, K. Lance Gould, David Allen, J. Ward Kennedy and Karl E. Hammarmeister
- 390 Detection of Acute Myocardial Infarction by Technetium-99m Polyphosphate. Peter McLaughlin, Geoffrey Coates, Donald Wood, Trevor Craddock and John Morch

### PEDIATRIC CARDIOLOGY

- 397 Late Systolic Murmur of Rheumatic Mitral Insufficiency. Leonard Steinfeld, Ivan Dimich, Howard Rappaport and Murray Baron

- 402 Tetralogy of Fallot: A Morphometric and Geometric Study. Anton E. Becker, Mike Connor and Robert H. Anderson

### REPORTS ON THERAPY

- 413 Potassium Canrenoate in the Treatment of Long-Term Digoxin-Induced Arrhythmias in Conscious Dogs. Norberto T. deGuzman and Billy K. Yeh

### REVIEWS

- 421 Pathophysiology of Second Degree Atrioventricular Block: A Unified Hypothesis. Nabil El-Sherif, Benjamin J. Scherlag and Ralph Lazzara

### DIAGNOSTIC SHELF

- 435 Loud First Heart Sound with Long P-R Intervals. Nayab Ali

### CASE REPORTS

- 439 Traumatic Right Coronary Arterial-Right Atrial Fistula. Gordon P. Anderson, Arnold Adicoff, George J. Motsay, Yoshio Sako and Fredarick L. Gobel
- 444 Echocardiographic Findings in Right Coronary Arterial-Right Ventricular Fistula. Report of a Neonate with Fatal Congestive Heart Failure. Mario S. Verani and Ronald M. Lauer
- 448 Transmural Myocardial Infarction During Pregnancy. Lewis Sasse, Richard Wagner and Frank E. Murray

### SPECIAL DEPARTMENTS

- 453 Reviews in Cardiology
- 456 Book Reviews
- 457 American College of Cardiology News

# CONTENTS: VOLUME 35

APRIL 1975

## CLINICAL STUDIES

- 461 Variability of Hemodynamic Responses to Acute Digitalization in Chronic Cardiac Failure Due to Cardiomyopathy and Coronary Artery Disease. Keith Cohn, Arthur Selzer, Edward S. Kersh, Leonard S. Karpman and Nora Goldschlager
- 469 Dose-Response Relation Between Therapeutic Levels of Serum Digoxin and Systolic Time Intervals. Robert J. Hoeschen and Thomas E. Cuddy
- 473 Echocardiographic Studies of Left Ventricular Wall Motion and Dimensions After Valvular Heart Surgery. Gary W. Burggraf and Ernest Craig
- 481 Hemodynamic Consequences of Total Removal of the Tricuspid Valve Without Prosthetic Replacement. Erwin Robin, Norman W. Thoms, Agustin Arbulu, Sunilendu N. Ganguly and Konstantinos Magnisalis
- 487 Altered Refractory Periods in Patients with Short P-R Intervals and Normal QRS Complex. Joe K. Bissett, Neil de Soyza, James J. Kane and Marvin L. Murphy

## EXPERIMENTAL STUDIES

- 492 Sinus Nodal Function in the Intact Dog Heart Evaluated by Premature Atrial Stimulation and Atrial Pacing. Andres R. Ticzon, Harold C. Strauss, John J. Gallagher and Andrew G. Wallace
- 504 Ischemic Heart Failure: Sustained Inotropic Response to Small Doses of L-Epinephrine Without Toxicity. Bunyad Haider, Mohammad I. Khan, William M. Burke and Timothy J. Regan

## EPIDEMIOLOGY

- 514 Risk Factors for Myocardial Infarction and Death Due to Ischemic Heart Disease and Other Causes. Gösta Tibblin, Lars Wilhelmsen and Lars Werkö
- 523 Influence of Race, Sex and Weight on Blood Pressure Behavior in Young Adults. Arnold L. Johnson, Joan C. Cornoni, John C. Cassel, Herman A. Tyroler, Siegfried Heyden and Curtis G. Hames

## METHODS

- 531 The Omnicardiogram. New Approach to Detection of Heart Disease in Patients with a Normal Resting Electrocardiogram. Louis Evan Teichholz, Peter F. Cohn and Richard Gorlin
- 537 Effect of Transducer Placement on Echocardiographic Measurement of Left Ventricular Dimensions. Richard L. Popp, Katherine Filly, Owen R. Brown and Donald C. Harrison
- SYMPOSIUM ON ATHEROSCLEROSIS AND METABOLISM OF THE ARTERIAL WALL**
- 541 Introduction. Richard J. Bing
- 542 Pathogenetic Mechanisms in Atherosclerosis. Kenneth W. Walton
- 559 Mechanisms of Cholesterol Accumulation in the Arterial Wall. Donald B. Zilverman
- 567 Aortic Mitochondrial Synthesis of Lipid and Its Response to Cholesterol Feeding. Arthur F. Whereat and Joseph L. Rabinowitz
- 572 Turnover of Phospholipids in Rat Aortic Smooth Muscle Cells in Culture. Yechezkiel Stein and Olga Stein
- 579 Lipid Metabolism in Perfused Human and Dog Coronary Arteries. Jonnalagedda S. M. Sarma, Harald Tillmanns, Shigeaki Ikeda, Arpine Grenier, Elana Colby and Richard J. Bing

## SPECIAL DEPARTMENTS

- 588 Letters to the Editor
- Posterior Wall Velocity—Bough et al.
- Ventricular Fibrillation Due to Passage of a Swan-Ganz Catheter—Cairns and Holder
- Multiple Coronary Arteriosystemic Fistulas—Gupta et al.
- Natural History of Angina Pectoris—Russek et al.
- External Counterpulsation and Aortic Balloon Pumping—Cokkinos
- 592 Reviews in Cardiology
- 593 Book Reviews
- 595 American College of Cardiology News

# CLINICAL STUDIES

- 597 Clinical Application of a Second Generation Electrocardiographic Computer Program. Hubert V. Pipberger, Donald McCaughan, David Littmann, Hanna A. Pipberger, Jerome Cornfield, Rosalie A. Dunn, Charles D. Batchlor and Alan S. Berson
- 609 Natural History of S-T Segment Elevation After Acute Myocardial Infarction. Roger M. Mills, Jr., Elliot Young, Richard Gorlin and Michael Lasch
- 615 Q Waves and Ventricular Asynergy: Predictive Value and Hemodynamic Significance of Anatomic Localization. Monty M. Bodenheimer, Vidya S. Banka and Richard H. Helfant

# EXPERIMENTAL STUDIES

- 619 Circulatory Effects of Tazoid in Experimental Myocardial Infarction. Howard T. Buckley, Arthur M. Strosberg and Donald C. Harrison
- 626 Effects of Changes in Preload, Afterload and Inotropic State on Ejection and Isovolumic Phase Measures of Contractility in the Conscious Dog. Felix Mahler, John Ross, Jr., Robert A. O'Rourke and James W. Covell

# REPORTS ON THERAPY

- 635 Noninvasive Assessment of Clinical Response to Oral Propranolol Therapy. William Frishman, Charles Smithen, Barbara Belfer, Paul Kilgfield and Thomas Killip
- 645 The Use of Practolol in Supraventricular Arrhythmias Associated with Acute Illnesses. Allan H. Pribble and Robert D. Conn
- 651 Inefficacy of "Therapeutic" Serum Levels of Digoxin in Controlling the Ventricular Rate in Atrial Fibrillation. Steven Goldman, Peter Probst, Arthur Selzer and Keith Cohn
- 656 Action of Drugs in Patients Early After Cardiac Surgery. I. Comparison of Isoproterenol and Dopamine. Earl L. Holloway, Edward B. Stinson, Geraldine C. Derby and Donald C. Harrison

# PEDIATRIC CARDIOLOGY

- 660 Postoperative Hemodynamic and Electrophysiologic Evaluation of the Interatrial Baffle Procedure. Cecille O. Sunderland, Dale P. Henken, G. Michael Nichols, Dharam S. Dhindsa, Lawrence I. Bonchek, Victor D. Menashe, Shahbudin H. Rahimtoola, Albert Starr and Martin H. Lees

# STUDIES IN HYPERTENSION

- 667 Hyperkinetic Heart in Severe Hypertension: A Separate Clinical Hemodynamic Entity. M. Mohsen Ibrahim, Robert C. Tarazi, Harriet P. Dusan, Emmanuel L. Bravo and Ray W. Gifford, Jr.

# DIAGNOSTIC SHELF

- 675 Atypical Posterior Leaflet Location in Echocardiogram in Mitral Stenosis. John T. Flaherty, Sue Livengood and Nicholas J. Fortuin

- 679 Echocardiographic Findings in Isolated, Surgically Created Tri-cuspid Insufficiency. Stuart F. Seides, Robert L. DeJoseph, Arthur E. Brown and Anthony N. Damato

# CASE REPORTS

- 683 Prinzmetal's Variant Angina: Hemodynamic and Angiographic Observations During Pain. William H. Gaasch, Ajit V. Adyanthaya, Vincent H. Wang, Ernest Pickering, Miguel A. Quinones and James K. Alexander
- 691 Transient Q Waves in Prinzmetal's Angina. Jose Meller, Cesar A. Conde, Ephraim Donoso and Simon Deck
- 696 Ventricular Aneurysm with Ventricular Tachycardia. Report of a Case with Epicardial Mapping and Successful Resection. John J. Gallagher, H. Newland Oldham, Andrew G. Wallace, Robert H. Peter and Jackie Kasell
- 701 Cardiovascular Complications of Pheochromocytoma Crisis. Wallace E. Radtke, Francis J. Kazmier, Barry D. Rutherford and Sheldon G. Sheps
- 706 Combined Hypertrophic Subaortic Stenosis and Calcific Aortic Valvular Stenosis. Allen D. Johnson, Stewart A. Lonky and Richard A. Carleton

# SYMPOSIUM ON THE CURRENT STATUS OF VALVE REPLACEMENT. PART I

- 710 Introduction. Shahbudin H. Rahimtoola
- 711 Valve Replacement—a Perspective. Shahbudin H. Rahimtoola
- 716 Hemodynamic Changes After Valve Replacement with Starr-Edwards Prostheses. J. David Bristow and E. Louise Kremkau
- 725 Myocardial Ultrastructure in Patients with Chronic Aortic Valve Disease. Barry J. Maron, Victor J. Ferrans and William C. Roberts
- 740 Cardiac Pathology After Valve Replacement by Disc Prosthesis. A Study of 61 Necropsy Patients. William C. Roberts, Michael C. Fishbein and Abner Golden

# EDITORIALS

- 761 Who Is a Cardiologist? Forrest H. Adams

# SPECIAL DEPARTMENTS

- 763 Letters To The Editor  
Ventricular Premature Contractions and A-V Conduction—I and II.—Watanabe and Klein
- 764 Book Reviews
- 765 American College of Cardiology News

# CONTENTS: VOLUME 35

JUNE 1975

## CLINICAL STUDIES

- 767 **Relation of Intraoperative or Early Postoperative Transmural Myocardial Infarction to Patency of Aortocoronary Bypass Grafts and to Diseased Ungrafted Coronary Arteries.** Jose L. Assad-Morell, Robert L. Frye, Daniel C. Connolly, Gerald T. Gau, James R. Pluth, Donald A. Barnhorst, Robert B. Wallace, George D. Davis, Lila R. Elveback and Gordon K. Danielson

- 774 **Aortocoronary Bypass in the Diabetic Patient.** Joseph J. Verska and Weldon J. Walker

- 778 **Ischemia in Aortic Stenosis: Hemodynamic Prediction.** Gerald Buckberg, Leslie Eber, Michael Herman and Richard Gorlin

- 785 **Abnormal Segmental Contraction Velocity in Coronary Artery Disease Produced by Isometric Exercise and Atrial Pacing.** Hans Peter Kraysenbuehl, Manfred Schoenbeck, Wilhelm Rutschhauser and Pierre Wirz

## EXPERIMENTAL STUDIES

- 795 **Effects of Hypoxemia on the Extent of Myocardial Necrosis After Experimental Coronary Occlusion.** Paulo Radvany, Peter R. Maroko and Eugene Braunwald

- 801 **Digitalis in Experimental Acute Myocardial Infarction. Differential Effects on Contractile Performance of Ischemic, Border and Nonischemic Ventricular Zones in the Dog.** Vidya S. Banka, Kul D. Chadda, Monty M. Bodenheimer and Richard H. Helfant

## EPIDEMIOLOGY

- 809 **Left Axis Deviation and Left Anterior Hemiblock Among 8,000 Japanese-American Men.** Katsuhiko Yano, Stephen M. Peskoe, George G. Rhoads, Joseph O. Moore and Abraham Kagan

## METHODS

- 816 **Diagnosis and Quantification of Arrhythmias in Ambulatory Patients Using an Improved R-R Interval Plotting System.** Mario G. Lopes, John Fitzgerald, Donald C. Harrison and John S. Schroeder

- 824 **Nonparoxysmal Junctional Tachycardia in Acute Myocardial Infarction: Computer Assisted Detection.** Suzanne B. Knoebel, Susan Rasmussen, D. Eugene Lovelace and Gary J. Anderson

## PEDIATRIC CARDIOLOGY

- 831 **Correction of Platelet Dysfunction and Bleeding in Cyanotic Congenital Heart Disease by Simple Red Cell Volume Reduction.** Harold M. Maurer, Carolyn M. McCue, Louise W. Robertson and Joyce C. Haggins

## REPORTS ON THERAPY

- 836 **Surgical versus Medical Treatment of Occlusive Disease Confined to the Left Anterior Descending Coronary Artery.** Nicholas T. Kouchoukos, Albert Oberman, Richard O. Russell, Jr. and William B. Jones

## SYMPOSIUM ON THE CURRENT STATUS OF VALVE REPLACEMENT. PART II

- 843 **Ball Valve Prostheses: Current Appraisal of Late Results.** Lawrence I. Bonchek and Albert Starr

- 855 **Current Status of the Beall, Bjork-Shiley, Braunwald-Cutler, Lillehei-Kaster and Smeloff-Cutter Cardiac Valve Prostheses.** Robert K. Brawley, James S. Donahoo and Vincent L. Gott

- 866 **Tissue Valves.** Robert B. Wallace

- 872 **Diagnosis and Management of Complications of Prosthetic Heart Valves.** Frank E. Kloster

- 886 **Renal Consequences of Valvular Heart Disease.** George A. Porter, William M. Bennett and John W. Wilson

## REPORT OF THE INTER-SOCIETY COMMISSION FOR HEART DISEASE RESOURCES

- 898 **Optimal Resources for Ultrasonic Examination of the Heart.** Raymond Gramiak, Nicholas J. Fortuin, Donald L. King, Richard L. Popp and Harvey Feigenbaum

## YOUNG INVESTIGATORS' AWARD

- 904 **Intramyocardial Pressure: Effect of Preload on Transmural Distribution of Systolic Coronary Blood Flow.** Joseph P. Archie, Jr.

## CASE REPORTS

- 912 **Bacterial Endocarditis with Ruptured Sinus of Valsalva and Aorticocardiac Fistula.** Cesar A. Conde, Jose Meller, Ephraim Donoso and Simon Dack

- 918 **Unruptured Sinus of Valsalva Aneurysm.** Michael C. Fishbein, Robert Obma and William C. Roberts

- 923 **Recurrent Myocardial Infarction and Angina in a Woman with Normal Coronary Angiograms.** David A. Ciraulo

## EDITORIALS

- 927 **Accuracy of Data Reduction Systems for Diagnosis and Quantification of Arrhythmias.** Eliot Corday and Tzu-Wang Lang

## SPECIAL DEPARTMENTS

- 929 **Letters to the Editor**  
Third Heart Sound in Hypertension—Gutiérrez-Rodríguez  
Surface Recording of His Bundle Activity—Stopczyk et al.
- 930 **Reviews in Cardiology**
- 931 **Book Reviews**
- 932 **American College of Cardiology News**
- 937 **Author Index: Volume 35**
- 939 **Subject Index: Volume 35**



# AUTHOR INDEX: VOLUME 35

- Adams FH, 761  
Adicoff A, 439  
Adolph RJ, 89, 251  
Adyanthaya AV, 683  
Agruss NS, 89  
Alexander JK, 683  
Ali N, 435  
Allen D, 380  
Amat-y-Leon F, 23  
Amsterdam EA, 11  
Anderson GJ, 824  
Anderson GP, 439  
Anderson RH, 402  
Anderson RP, 30  
Anselmi A, 97  
Anselmi G, 97  
Arbulu A, 481  
Archie JP Jr, 904  
Assad-Morell JL, 767  
August LS, 251
- Baltaxe HA, 271  
Banka VS, 615, 801  
Barnhorst DA, 228, 767  
Baron M, 397  
Bashour T, 199  
Batchlor CD, 597  
Becker AE, 402  
Befeler B, 282, 635  
Belcourt C, 42  
Bennett WM, 886  
Berson AS, 597  
Betriu A, 363  
Bharati S, 299  
Bing RJ, 541, 579  
Bissett JK, 487  
Bodenheimer MM, 615, 801  
Bonchek LI, 660, 843  
Bouchard RJ, 216  
Bough EW, 588  
Braunwald E, 795  
Bravo EL, 667  
Brawley RK, 855  
Bristow JD, 716  
Brown AE, 679  
Brown OR, 537  
Buckberg G, 778  
Buckley HT, 619  
Bulkley BH, 305  
Burggraf GW, 473  
Burke WM, 504  
Byhardt R, 216
- Cairns JA, 589  
Carleton RA, 706  
Cassel JC, 523  
Castellanos A Jr, 282  
Chadda KD, 801  
Chang P, 216  
Chuquimia R, 23  
Ciraulo DA, 923
- Clark CE, 337  
Coates G, 390  
Cohen EM, 103  
Cohen LS, 112  
Cohn JN, 116  
Cohn K, 461, 651  
Cohn PF, 531  
Cokkinos DV, 591  
Colby E, 579  
Conde CA, 309, 691, 912  
Conn RD, 645  
Connolly DC, 228, 767  
Connor M, 402  
Corday E, 330, 927  
Corday SR, 330  
Cornfield J, 597  
Cornoni JC, 523  
Covell JW, 626  
Craddock T, 390  
Craig E, 346, 473  
Cuddy TE, 469
- Dack S, 309, 691, 912  
Damato AN, 370, 679, 929  
Danielson GK, 228, 767  
Davis GD, 767  
deGuzman NT, 413  
DeJoseph RL, 679  
de la Fuente DJ, 299  
DeMaria AN, 11  
DeMuth WE, 243  
Denes P, 23  
Deppisch LM, 309  
Derby GC, 656  
de Soyza N, 487  
de Suarez C, 97  
Dhindsa DS, 660  
Dhingra RC, 23  
Diaz-Gorin JR, 234  
Dimich I, 397  
Dische MR, 271  
Donahoo JS, 855  
Donoso E, 309, 691, 912  
Doyle EF, 116  
Dunn RA, 597  
Dustan HP, 667
- Eber L, 778  
Edwards JE, 59  
El-Sherif N, 421  
Elster SK, 72  
Elveback LR, 767  
Emmanouilides GC, 107  
Epstein SE, 278, 337
- Feigenbaum H, 898  
Felderhof CH, 363  
Ferrans VJ, 725  
Filly K, 537  
Fisch C, 457, 765
- Fishbein M, 107  
Fishbein MC, 740, 918  
Fitzgerald J, 816  
Flaherty JT, 675  
Fleischmann P, 293  
Flowers NC, 929  
Forker AD, 315, 319  
Fortuin NJ, 675, 898  
Freedom RM, 54  
Freij Y, 299  
Frink RJ, 17  
Frishman W, 635  
Frye RL, 767
- Gaasch WH, 683  
Gabel M, 251  
Gallagher JJ, 492, 696  
Gallardo J, 234  
Ganguly SN, 324, 481  
Gau GT, 767  
Gifford RW Jr, 667  
Gillette PC, 288  
Gobel FL, 439  
Golden A, 740  
Goldman S, 651  
Goldschlager N, 461  
Gorfinkel HJ, 199  
Gortin R, 531, 609, 778  
Gott VL, 855  
Gould KL, 380  
Gramiak R, 898  
Green M, 651  
Grenier A, 579  
Griffith JM, 337  
Gross I, 204  
Gupta SC, 589  
Gutiérrez-Rodríguez O, 929
- Haggins JC, 831  
Halder B, 504  
Hamby RI, 590  
Hames CG, 523  
Hamilton GW, 380  
Hammermeister KE, 380  
Han J, 37  
Harrison DC, 537, 619, 656, 816  
Helfant RH, 615, 801  
Henken DP, 660  
Henry WL, 278, 337  
Herman M, 778  
Heyden S, 523  
Hoeschen RJ, 467  
Holder D, 589  
Holloway EL, 656  
Homcy E, 54  
Horowitz LN, 376  
Hsu I, 199
- Ibrahim MM, 667  
Ikeda S, 579
- Johnson AD, 706  
Johnson AL, 523  
Jones WB, 590, 836  
Jurado RA, 72
- Kagan A, 809  
Kallen RJ, 299  
Kalmanson D, 80  
Kane JJ, 487  
Karlner JS, 588  
Karpman LS, 461  
Kasell J, 696  
Kawashima Y, 116  
Kazmier FJ, 701  
Keith JD, 42  
Kennedy JW, 380  
Kersh ES, 461  
Khan MI, 504  
Killip T, 635  
King DL, 898  
Klein HO, 763  
Kligfield P, 635  
Kloster FE, 872  
Knoebel SB, 824  
Kouchoukos NT, 836  
Krayenbuehl HP, 785  
Kremkau EL, 716  
Krovetz LJ, 278
- Lang T-W, 927  
Lauer RM, 444  
Lazzara R, 421  
Leopold GR, 588  
Lesch M, 609  
Lev M, 299  
Levenson NI, 89, 251  
Liedtke AJ, 243  
Littmann D, 597  
Livengood S, 675  
Loew DE, 103  
Lonky SA, 706  
Lopes MG, 816  
Lovelace DE, 824  
Lowe HM, 17  
Lucas RV Jr, 59  
Ludbrook P, 588  
Lurie AJ, 11
- Magnisalis K, 324, 481  
Mahler F, 626  
Mallander MM, 11  
Marín-García J, 59  
Maroko PR, 795  
Maron BJ, 278, 725  
Martin RG, 216  
Mason DT, 11  
Mattes LM, 72  
Maurer HM, 831  
McCaughan D, 597  
McCue CM, 831

# AUTHOR INDEX

- McGoon DC, 228  
 McIntosh HD, 194, 334  
 McLaughlin P, 390  
 McLoughlin MJ, 363  
 McNamara DG, 288  
 Medina O, 234  
 Meller J, 309, 691, 912  
 Menashe VD, 660  
 Merrick B, 17  
 Merx W, 37  
 Messer JV, 103  
 Meyers BR, 72  
 Miller RR, 11  
 Mills RM Jr, 609  
 Moes CAF, 42  
 Moleiro F, 97  
 Moore EN, 376  
 Moore JO, 809  
 Moraski RE, 1  
 Morch J, 390  
 Morganroth J, 278  
 Motsay GJ, 439  
 Mullins CE, 288  
 Munoz S, 234  
 Murphy ML, 487  
 Murray FE, 448
- Nasrallah AT, 288  
 Neill WA, 30  
 Nichols GM, 660  
 Nihill MR, 288  
 Noy Y, 293
- Oberman A, 590, 836  
 Obama R, 918  
 Oldham HN, 696  
 Oran E, 589  
 O'Rourke RA, 588, 626  
 Oxendine J, 30  
 Oxman HA, 228
- Parisi LF, 42  
 Paulay KL, 370  
 Pérez-Treviño C, 42
- Peskoe SM, 809  
 Peter RH, 696  
 Peterson KL, 588  
 Phelps N, 30  
 Pickering E, 683  
 Pieroni DR, 54  
 Pipberger HA, 597  
 Pipberger HV, 597  
 Pluth JR, 228, 767  
 Popp RL, 537, 898  
 Porter GA, 886  
 Pribble AH, 645  
 Probst P, 651  
 Proudfit WL, 211
- Quinones MA, 683
- Rabinowitz JL, 567  
 Rackley CE, 1  
 Radtke WE, 701  
 Radvany P, 795  
 Rahimtoola SH, 660, 710, 711  
 Rapaport E, 221  
 Rappaport H, 397  
 Rasmussen S, 824  
 Reeves TJ, 590  
 Regan TJ, 504  
 Reynolds JL, 42  
 Rhoads GG, 809  
 Rios JC, 199  
 Ritchie JL, 380  
 Roberts WC, 305, 725, 740, 918  
 Robertson LW, 831  
 Robin E, 324, 481  
 Rogers R, 376  
 Romhilt DW, 251  
 Rosen KM, 23  
 Rosengart R, 107  
 Ross J Jr, 626  
 Roy DL, 42  
 Ruckdeschel JC, 216  
 Ruesta V, 97  
 Russek HI, 590  
 Russell RO Jr, 1, 836
- Rutherford BD, 701  
 Rutishauser W, 785
- Sabbah HN, 258, 264  
 Sako Y, 439  
 Sarma JSM, 579  
 Sasse L, 448  
 Schatz UJ, 204  
 Scherlag BJ, 421  
 Schoenbeck M, 785  
 Schroeder JS, 816  
 Schwartz MJ, 116  
 Seides SF, 679  
 Selzer A, 461  
 Sheffield LT, 590  
 Sheldon WC, 211  
 Sheps SG, 701  
 Silberberg B, 324  
 Smith M, 1  
 Smith MR, 89  
 Smithen C, 635  
 Sodd VJ, 251  
 Spear JF, 376  
 Spodick DH, 357  
 Starr A, 660, 843  
 Stegall HF, 80  
 Stein O, 572  
 Stein PD, 258, 264  
 Stein Y, 572  
 Steinfeld L, 397  
 Stinson EB, 656  
 Stopczyk M, 929  
 Strauss HC, 492  
 Strosberg AM, 619  
 Suarez JA, 97  
 Sunderland CO, 660
- Tandon R, 59  
 Tarazi RC, 667  
 Teichholz LE, 531  
 Thoms NW, 481  
 Tibblin G, 514  
 Ticzon AR, 492  
 Tillmanns H, 579  
 Tsai M, 271  
 Tyroler HA, 523
- Udall JA, 67  
 Upshaw CB Jr, 85
- Vagueiro MC, 282  
 Van Praagh R, 42  
 Verani MS, 444  
 Verska JJ, 774
- Wagner R, 448  
 Walder W, 346  
 Walker WJ, 774  
 Wallace AG, 492, 696  
 Wallace RB, 228, 767, 866  
 Walton KW, 542  
 Wang VH, 683  
 Watanabe Y, 763  
 Weaver WF, 315, 319  
 Weinberg PM, 42  
 Welch CC, 211  
 Wells DE, 282  
 Werkö L, 514  
 Whereat AF, 567  
 Wickramesekaran R, 199  
 Wiernik PH, 216  
 Wigle ED, 363  
 Wilhelmsen L, 514  
 Wilson CS, 315, 319  
 Wilson JW, 886  
 Wirz P, 785  
 Wood D, 390  
 Wu D, 23  
 Wyndham C, 23
- Yano K, 809  
 Yeh BK, 282, 413  
 Yoon MS, 37  
 Young E, 609
- Zaret BL, 112  
 Zelis R, 11  
 Zeman ED, 319  
 Zilversmit DB, 559

# SUBJECT INDEX: VOLUME 35

- Abstracts from twenty-fourth annual scientific session of the American College of Cardiology, 117
  - author index to, 180
  - subject index to, 184
- Acetylstrophanthidin in severe ischemic heart failure, 504
- Afterload and ejection and isovolumic phase measures of contractility, 626
- Albumin, macroaggregated, and dual isotope myocardial imaging, 380
- Alcohol consumption
  - and cardiovascular performance after experimental nonpenetrating chest trauma, 243
  - and risk of ischemic heart disease, 514
  - and systolic honk, 85
- American College of Cardiology
  - Calendar of continuing medical education programs, 195, 335, 458, 595, 766, 932
  - Committee appointments, 1975-1976, 933
  - New members elected, 459, 595
  - President's page
    - The College and the gifted teacher, 765
    - Excellence in cardiovascular practice—1975, 194
    - Goals and objectives, 457
    - Solving our own problems, 334
  - Twenty-fourth annual scientific session, abstracts of, 117
    - author index to, 180
    - subject index to, 184
- Aminophylline and ventricular fibrillation threshold during respiratory failure, 376
- Anemia, hemolytic, after valve replacement, diagnosis and management of, 872
- Anesthetic agents and sinus nodal response to premature atrial stimulation and atrial pacing, 492
- Aneurysms
  - bilateral coronary arterial
    - arteriosclerotic, treated surgically, 315
    - nonfistulous congenital, 319
  - sinus of Valsalva
    - and surgery for Hemophilus aphrophilus endocarditis, 72
    - unruptured, 918
  - ventricular
    - after acute myocardial infarction, incidence of, 609
    - Q waves and, 615
    - with ventricular tachycardia, 696
- Angina pectoris
  - and assessment of clinical response to propranolol, 635
  - and diabetes, aortocoronary bypass surgery for, 774
  - and ischemia in aortic stenosis, 778
  - and rate of change of power during isovolumic contraction, 258
  - and recurrent myocardial infarction in a woman with normal coronary angiograms, 923
  - and surgical vs. medical treatment of left anterior descending coronary artery disease, 836
  - natural history of, 590
  - Prinzmetal's variant
    - hemodynamic and angiographic observations in, 683
    - transient Q waves in, 691
  - radionuclide techniques in, 112
- Angiogram
  - after Mustard procedure for dextrotransposition of great arteries, 660
  - and dual isotope myocardial imaging, 380
  - and late systolic murmur of mitral insufficiency, 397
  - and prolapse of posterior leaflet of mitral valve and secundum atrial septal defect, 363
- Angiogram
  - and traumatic right coronary arterial-right atrial fistula, 439
  - coronary
    - in 1,000 women under age 50 years, 211
    - mechanism of bradycardia during, 17
    - normal
      - and myocardial infarction, 448
      - recurrent myocardial infarction and angina in a woman with, 923
    - during pain in Prinzmetal's variant angina, 683
    - in aortic origin of left pulmonary artery in tetralogy of Fallot, 324
    - in aortic stenosis, 778
    - in cor triatriatum, 59
    - in double outlet right ventricle with pulmonary stenosis and subaortic ventricular septal defect, 42
    - in right coronary arterial-right ventricular fistula, 444
    - radionuclide, in coronary artery disease, 112
  - Angiographic contrast medium and renal consequences of valvular heart disease, 886
  - Antiarrhythmic agents
    - and short P-R interval and normal QRS complex, 487
    - electrophysiologic effects of disopyramide phosphate, 282
  - Antibiotic agents
    - after surgery for bacterial endocarditis with ruptured sinus of Valsalva and aorticocardiac fistula, 912
    - and tissue valve replacement, 866
    - for bacterial endocarditis, nephrotoxicity of, 886
    - sensitivity, and Hemophilus aphrophilus endocarditis, 72
  - Anticoagulant therapy
    - and disc valve prosthesis, 740
    - and sedatives, interaction of, 67
    - in valve replacement, 711, 843, 855, 872
  - Antiplatelet drugs and valve replacement, 843
  - Anxiety and hyperkinetic heart in severe hypertension, 667
  - Aorta, lipid metabolism of, model for study of, 572
  - Aortic arch, solitary interruption of, 271
  - Aortic balloon pumping and external counterpulsation, 591
  - Aortic regurgitation, myocardial ultrastructure in, 725
  - Aortic root, small, and aortic valve prosthesis, 855
  - Aortic sinus
    - ruptured, with bacterial endocarditis and aorticocardiac fistula, 912
    - unruptured aneurysm of, 918
  - Aortic smooth muscle cells, phospholipid turnover in, 572
  - Aortic stenosis
    - and electrocardiographic evidence of left ventricular hypertrophy in children, 278
    - and first heart sound and ejection sounds, 346
    - calcific, with hypertrophic subaortic stenosis, 706
    - hemodynamic prediction of ischemia in, 778
    - myocardial ultrastructure in, 725
    - vs. aortic regurgitation, natural history of, 221
  - Aortic valve, bicuspid, and solitary interruption of aortic arch, 271
  - Aortic valve area and ischemia in aortic stenosis, 778
  - Aortic valve disease
    - and first heart sound and ejection sounds, 346
    - chronic, myocardial ultrastructure in, 725
    - natural history of, 221
    - rheumatic, surgery for, 234
  - Aortic valve incompetence and fuzzy sets theory, 80
  - Apex cardiography in nonobstructive hypertrophic cardiomyopathy mimicking mitral stenosis, 89
  - Arrhythmias
    - (see also specific type)
    - after chest trauma following alcohol consumption, 243

- Arrhythmias
  - after digitalis for chronic cardiac failure due to cardiomyopathy and coronary artery disease, 461
  - after Mustard procedure for dextrotransposition of great arteries, 660
  - digoxin-induced, potassium canrenoate for, 413
  - during respiratory failure, aminophylline and, 376
  - in ambulatory patients, diagnosis and quantification of, using an improved R-R interval plotting system, 816, 927
  - inefficacy of "therapeutic" serum levels of digoxin in, 651
  - pacemaker-induced, and unipolar cathodal vs. bipolar stimulation, 37
  - sinus, and nonparoxysmal junctional tachycardia in acute myocardial infarction, detected by computer, 824
  - supraventricular, in acute illnesses, practolol for, 645
  - ventricular, after epinephrine in severe ischemic heart failure, 504
- Arterial wall
  - and development of atherosclerosis, 542
  - cholesterol uptake in, and 7-ketocholesterol, 579
  - mechanism of cholesterol accumulation in, 559
  - metabolism of, and atherosclerosis, symposium on, 541
- Arteriograms
  - (see Angiograms)
- Arteritis, coronary, and myocardial infarction in systemic lupus erythematosus, 309
- Arteriosclerosis
  - (see Atherosclerosis)
- Asynrgy, ventricular
  - after acute myocardial infarction, 609
  - and pathologic Q waves, 615
- Atherogenesis and cholesterol feeding, 567
- Atherosclerosis
  - (see also Coronary artery disease)
  - and bilateral coronary arterial aneurysms, 315
  - and metabolism of arterial wall, symposium on, 541
  - control of risk factors for, 332
  - myocardial infarction due to, in systemic lupus erythematosus, 309
  - pathogenetic mechanisms in, 542
- Atresia, acquired pulmonary, and surgery for double outlet right ventricle [S,D,L], 42
- Atrial fibrillation
  - diagnosis and quantification of, in ambulatory patients, 816
  - inefficacy of "therapeutic" serum levels of digoxin in, 651
  - practolol for, 645
- Atrial septal defect
  - and first heart sound and ejection sounds, 346
  - ostium primum, vs. secundum defect with prolapse of posterior leaflet of mitral valve, 363
  - secundum, and prolapse of posterior leaflet of mitral valve, 363
- Atrial stimulation, premature, and rapid atrial pacing to evaluate sinus nodal function, 492
- Atrioventricular canal
  - defect, echocardiography in, 54
  - persistent common, and cor triatriatum, 59
- Atrioventricular node
  - blood supply to, and heart rate during angiography, 17
  - refractory period of, and disopyramide phosphate, 282
- Atrioventricular valve motion in atrioventricular canal defect, 54
- Atrium
  - accessory left, in cor triatriatum, 59
  - right, premature stimulation of, and sinus nodal function, 492
- Atropine and heart rate during coronary angiography, 17
- Auscultation
  - after valve replacement, 872
  - and pericardial friction rubs in 100 patients, 357
- Autonomic nervous activity in hyperkinetic heart in severe hypertension, 667
- Barbiturates and warfarin, interaction of, 67
- Beta adrenergic blocking agents
  - (see also specific agent)
  - and hyperkinetic heart in severe hypertension, 667
  - and pheochromocytoma, 701
  - for supraventricular arrhythmias in acute illnesses, 645
  - noninvasive assessment of clinical response to, 635
- Bigeminy, diagnosis and quantification of, in ambulatory patients, 816
- Bleeding, postoperative, in cyanotic congenital heart disease, 831
- Blood cell, red, volume reduction of, in cyanotic congenital heart disease, 831
- Blood flow, coronary
  - and dual isotope myocardial imaging, 380
  - in aortic stenosis, 778
  - in coronary artery disease, radionuclide measurement of, 112
  - systolic, preload and transmural distribution of, 904
- Blood groups and risk of ischemic heart disease, 514
- Blood plasma factor and blood platelets in ischemic heart disease, 204
- Blood platelet response to plasma from patients with ischemic heart disease, 204
- Blood pressure
  - aortic, and aortic sinus aneurysm, 918
  - intramyocardial, and transmural distribution of systolic coronary blood flow, 904
- Blood vessels, collateral, in solitary interruption of aortic arch, 271
- Body weight and blood pressure behavior in young adults, 523
- Book Reviews
  - Biofeedback: Behavioral Medicine (Birk, ed), 594
  - Cardiac Mechanics: Physiological, Clinical, Mathematical Considerations (Mirsky, Ghista, Sandler, ed), 764
  - The Heart, Arteries and Veins, third edition (Hurst, Logue, Schlant, Wenger, ed), 593
  - Manual on Artificial Organs, Volume 2: The Oxygenator (Nose), 456
  - Role of Catecholamines in Cardiovascular Diseases. I. Hypertension (Bhagat), p 764
  - The Surgical Treatment of Acute Myocardial Ischemia (Cohn), 593
  - Systemic Arterial Hypertension (Mendlowitz), 594
  - Type A Behavior and Your Heart (Friedman and Rosenman), 764
- Bradycardia during coronary angiography, mechanism of, 17
- Bundle branch block
  - bifascicular, H-V interval in, 23
  - in systemic lupus erythematosus, 299
  - right
    - and first heart sound and ejection sounds, 346
    - and left anterior hemiblock, H-V interval in, 23
- Bypass graft, patent, and ventricular compliance, 11
- Carbon monoxide and cholesterol uptake in arterial wall, 579
- Cardiac glycosides and systolic time intervals, 469
- Cardiac muscle cells, hypertrophy of, in chronic aortic valve disease, 725
- Cardiac output, low, and drug administration early after cardiac surgery, 656
- Cardiologist, definition of, 761
- Cardiomyopathy
  - and congestive heart failure, systolic honk due to, 85
  - and coronary artery disease with chronic cardiac failure, variable hemodynamic responses to digoxin in, 461
  - nonobstructive hypertrophic, mimicking mitral stenosis, 89
  - primary, in identical twins, 97
- Cardiovascular research and fuzzy sets theory, 80
- Catecholamines
  - and pheochromocytoma, 701



- Catecholamines  
in severe ischemic heart failure, 504
- Catheters  
flotation intracardiac electrode, for arrhythmia analysis, 927  
Swan-Ganz, ventricular fibrillation due to, 589
- Cells, aortic smooth muscle, phospholipid turnover in, 572
- Certification of cardiologists, 761
- Cesium-129 in myocardial scintigraphy, 251
- Chest pain  
and coronary arteriograms in 1,000 women under age 50 years, 211  
and internal mammary arteriovenous fistula, 103
- Chest roentgenogram and bilateral nonfistulous congenital coronary arterial aneurysms, 319
- Chest trauma after alcohol consumption, cardiovascular performance after, 243
- Chloral hydrate and anticoagulant inhibition, 67
- Cholesterol  
accumulation of, in arterial wall, 559  
and aortic mitochondrial synthesis of lipid, 567  
serum, and risk of ischemic heart disease, 514  
uptake in arterial wall and 7-ketocholesterol, 579
- Cholesteryl esters and atherosclerosis, 559
- Chylomicrons in atherogenesis, 559
- Clinical studies in bifascicular block, 23
- Coarctation of aorta in cor triatriatum, 59
- Coffee consumption and risk of ischemic heart disease, 514
- Collagenase and cholesterol uptake in arterial wall, 579
- Computer  
and ambulatory arrhythmia monitoring, 816, 927  
and detection of nonparoxysmal junctional tachycardia in acute myocardial infarction, 824  
program, second generation electrocardiographic, 597
- Conal absorption hypothesis in tetralogy of Fallot, 402
- Conal inversion, lack of, in tetralogy of Fallot, 402
- Conduction  
atrioventricular  
and premature ventricular contractions, 763  
and short P-R interval and normal QRS complex, 487  
in hyperkalemia, 199  
retrograde, dual pathways of electrocardiogram and, 293  
intraventricular, in hyperkalemia, 199  
sinoatrial, evaluated by premature atrial stimulation and rapid atrial pacing, 492
- Conduction disease and bifascicular block, 23
- Conduction disturbances  
and action potentials in ischemic His-Purkinje system, 421  
atrioventricular, potassium canrenoate for, 413  
concealed His bundle extrasystoles in congenital heart disease, 288  
intraventricular, in primary cardiomyopathy in identical twins, 97
- Conduction system in systemic lupus erythematosus with atrioventricular block, 299
- Congenital defects  
(see also Pediatric cardiology)  
and internal mammary arteriovenous fistula, 103  
aneurysm of sinus of Valsalva, unruptured, 918  
aortic origin of left pulmonary artery in tetralogy of Fallot, 324  
bilateral nonfistulous coronary arterial aneurysms, 319  
dextrotransposition of great arteries, interatrial baffle procedure for, 660  
double outlet right ventricle, surgical correction of, 116  
solitary interruption of aortic arch, 271  
tetralogy of Fallot, morphometric and geometric study of, 402  
transposition of great arteries, pulmonary vascular disease after surgical correction of, 107
- Congenital heart disease  
(see also Pediatric cardiology)  
Congenital heart disease  
and primary cardiomyopathy in identical twins, 97  
concealed His bundle extrasystoles in, 288  
cyanotic, red cell volume reduction in, 831
- Contraceptive therapy and angina pectoris and recurrent myocardial infarction in a woman with normal coronary angiograms, 923
- Contractility  
myocardial  
and fractional rate of change of power during isovolumic contraction, 264  
and isometric exercise and atrial pacing in coronary artery disease, 785  
and practolol for supraventricular arrhythmias, 645  
and rate of change of power during isovolumic contraction, 258
- ventricular  
and digitalis in experimental acute myocardial infarction, 801  
in intact circulation, 626
- Contraction velocity, abnormal segmental, in coronary artery disease, 785
- Coronary arteries  
bilateral aneurysms of  
arteriosclerotic, treated surgically, 315  
nonfistulous congenital, 319  
blood flow (see Blood flow, coronary)  
lipid synthesis in, 579  
perfusion of  
and dual isotope myocardial imaging, 380  
and lipid metabolism in, 579  
spasm of  
and Prinzmetal's variant angina, 683  
and recurrent myocardial infarction and angina pectoris, 923  
and transmural myocardial infarction during pregnancy, 448
- Coronary artery disease  
abnormal segmental contraction velocity in, 785  
and cardiomyopathy, with chronic cardiac failure, variable hemodynamic responses to digoxin in, 461  
and congestive heart failure, tazolol in, 619  
and diabetes, aortocoronary bypass surgery in, 774  
and disc valve replacement, 740  
and dual isotope myocardial imaging, 380  
and hemodynamic prediction of ischemia in aortic stenosis, 778  
and left axis deviation and left anterior hemiblock in Japanese-American men, 809  
and S-T segment elevation after acute myocardial infarction, 609  
and transmural myocardial infarction, 767  
left anterior descending, surgical vs. medical treatment for, 836  
left ventricular function in, 1  
myocardial infarction due to, in systemic lupus erythematosus, 309  
omnicardiogram in, 531  
prevention of, by control of risk factors, 330  
Q waves and ventricular asynergy in, 615  
radionuclides in, 112  
surgery for (see under Surgery)  
tachycardia-induced subendocardial ischemia in, 30
- Coronary care unit and computer-assisted detection of arrhythmias in acute myocardial infarction, 824
- Coronary occlusion, experimental  
digitalis in, 801  
hypoxemia and myocardial necrosis after, 795
- Cor pulmonale and first heart sound and ejection sounds, 346
- Corticosteroids  
and conduction system in systemic lupus erythematosus, 299  
and Libman-Sacks endocarditis in systemic lupus erythematosus, 305
- Cor triatriatum, 20 cases of, 59
- Counterpulsation, external, and aortic balloon pumping, 591

## SUBJECT INDEX

- Coumarin and sedatives, interaction of, 67
- Creatine phosphokinase
  - and hypoxemia after experimental coronary occlusion, 795
  - and natural history of S-T segment elevation after acute myocardial infarction, 609
- Crista supraventricularis vs. parietal band in tetralogy of Fallot, 402
- Cyanosis in aortic origin of left pulmonary artery in tetralogy of Fallot, 324
  
- Degenerative theory of atherogenesis, 542
- Diabetes
  - and aortocoronary bypass surgery for coronary arteriosclerosis, 774
  - and risk factors for coronary artery disease, 330
- Digitalis
  - and practolol for supraventricular arrhythmias, 645
  - in experimental coronary occlusion, 801
  - serum levels of
    - and systolic time intervals, 469
    - "therapeutic," in atrial fibrillation, 651
  - toxicity
    - and atrial fibrillation, 651
    - and sinus nodal reentry in dog, 370
    - potassium canrenoate for arrhythmias caused by, 413
  - variable hemodynamic responses to, in chronic cardiac failure due to cardiomyopathy and coronary artery disease, 461
- Digoxin
  - and sinus nodal reentry in dog, 370
  - in experimental coronary occlusion, 801
  - inefficacy of "therapeutic" serum levels of, in atrial fibrillation, 651
  - serum, therapeutic levels of, and systolic time intervals, 469
  - variable hemodynamic responses to, in chronic cardiac failure due to cardiomyopathy and coronary artery disease, 461
- Disopyramide phosphate, electrophysiologic effects of, 282
- Diuretic agents
  - and renal consequences of valvular heart disease, 886
  - canrenoate, and digoxin-induced arrhythmias, 413
- d-loop, ventricular, and double outlet right ventricle [S,D,L], 42
- Dopamine early after cardiac surgery, 656
- Ductus arteriosus in solitary interruption of aortic arch, 271
- Dye, angiographic, and heart rate during angiography, 17
- Dyspnea on exertion and risk of ischemic heart disease, 514
  
- Ebstein's anomaly of tricuspid valve in cor triatriatum, 59
- Echocardiogram
  - after valve replacement, 872
  - and atypical posterior leaflet motion in mitral stenosis, 675
  - and electrocardiographic evidence of left ventricular hypertrophy in children, 278
  - and first heart sound and ejection sounds, 346
  - and late systolic murmur of mitral insufficiency, 397
  - and left ventricular dimensions, effect of transducer placement on, 537
  - and left ventricular wall motion and dimensions after valvular surgery, 473
  - clinical spectrum of, in atrioventricular canal defect, 54
  - in assessment of clinical response to propranolol, 635
  - in cardiac diagnosis, ICHD guidelines for, 898
  - in nonobstructive hypertrophic cardiomyopathy mimicking mitral stenosis, 89
  - in obstructive asymmetric septal hypertrophy, 337
  - in radiation-related pericarditis, 216
  - in right coronary arterial-right ventricular fistula, 444
  - in surgically created tricuspid insufficiency, 679
- Education (see Training)
  
- Ejection fraction
  - after bypass surgery for ischemic heart disease, 11
  - and clinical response to propranolol, 635
  - and left ventricular function in coronary artery disease, 1
- Ejection time, left ventricular, and digitals, 469
- Electrocardiogram
  - after chest trauma following alcohol consumption, 247
  - and ambulatory arrhythmia monitoring, 816
  - and chest pain in women under age 50 years, 211
  - and concealed His bundle extrasystoles, 288
  - and dual pathways of retrograde impulse conduction, 293
  - and evidence of left ventricular hypertrophy in normal children, 278
  - and ventricular asynergy, 615
  - in acute myocardial infarction, 609
  - in aortic origin of left pulmonary artery in tetralogy of Fallot, 324
  - in bifascicular block, 23
  - in double outlet right ventricle with pulmonary stenosis and subaortic ventricular septal defect, 42
  - in 8,000 Japanese-American men, 809
  - in hyperkalemia, 199
  - in pheochromocytoma, 701
  - in Prinzmetal's variant angina, 691
  - in systemic lupus erythematosus with myocardial infarction, 309
  - vs. omniscardiogram in heart disease, 531
- Electrocardiographic computer programs, second generation, 597
- Electrogram, intraatrial, and long P-R intervals with loud first heart sound, 435
- Electrophysiologic studies
  - of aminophylline and ventricular fibrillation threshold, 376
  - of bifascicular block, 23
  - of effects of disopyramide phosphate, 282
  - of second degree atrioventricular block, 421
  - of short P-R interval and normal QRS complex, 487
- Emboli, systemic, in *Hemophilus aphrophilus* endocarditis, 72
- Embryology
  - in double outlet right ventricle with pulmonary stenosis and subaortic ventricular septal defect, 42
  - in tetralogy of Fallot, 402
- Enderteritis, infectious, and internal mammary arteriovenous fistula, 103
- Endocarditis
  - bacterial
    - after tissue valve replacement, 866
    - after valve replacement, diagnosis and management of, 872
    - and renal consequences of valvular heart disease, 886
  - prosthetic
    - and disc valve replacement, 740
    - incidence of, 843
    - with ruptured sinus of Valsalva and aorticocardiac fistula, 912
- Hemophilus aphrophilus*, 23 cases of, 72
- Libman-Sacks, and systemic lupus erythematosus, 305
- pseudomonas, of tricuspid valve, surgical treatment of, 481
- Epicardial mapping in ventricular aneurysm with ventricular tachycardia, 696
- Epidemiologic studies
  - of cholesterol in atherogenesis, 559
  - of influence of race, sex and weight on blood pressure behavior in young adults, 523
  - of left axis deviation and left anterior hemiblock in Japanese-American men, 809
  - of risk factors
    - for atherosclerosis, 542
    - for ischemic heart disease, 514
- Epinephrine
  - and aminophylline and ventricular fibrillation, 376
  - in severe ischemic heart failure, 504
- Evans County, Georgia, study of influence of race, sex and weight on blood pressure behavior in young adults, 523

- Exercise and risk factors for coronary artery disease, 330
- Exercise testing
- after digitals for chronic cardiac failure, 461
  - and surgical vs. medical treatment of left anterior descending coronary artery disease, 836
  - double Master, vs. omniscardiogram, 531
  - ischemia induced by, and myocardial scintigraphy, 251
  - isometric, and abnormal segmental contraction velocity in coronary artery disease, 785
  - in assessment of clinical response to propranolol, 635
- Extrasystoles, concealed His bundle, in congenital heart disease, 288
- Fascia lata for aortic valve replacement, 866
- Fatty acid synthesis, mitochondrial, and cholesterol feeding, 567
- Fibrinogen and atherogenesis, 542
- Fistulas
- aorticocardiac, and bacterial endocarditis with ruptured sinus of Valsalva, 912
  - internal mammary arteriovenous, with pulmonary communication, 103
  - multiple coronary arteriosystemic, 589
  - right coronary arterial-right atrial, traumatic, 439
  - right coronary arterial-right ventricular, echocardiogram in, 444
- Fossa ovalis and left atrial chambers in cor triatriatum, 59
- Frank lead system in second generation electrocardiographic computer program, 597
- Fuzzy sets theory and cardiovascular investigations, 80
- Glomerular filtration and renal consequences of valvular heart disease, 886
- Glucagon vs. tazolol in experimental myocardial infarction, 619
- Glutethimide and anticoagulant inhibition, 67
- Göteborg, men born in 1913 in, and risk factors for ischemic heart disease, 514
- Grafts, bypass, and transmural myocardial infarction, 767
- Growth, retarded, in aortic origin of left pulmonary artery in tetralogy of Fallot, 324
- Heart, hyperkinetic, in severe hypertension, 667
- Heart block
- and diagnosis and quantification of arrhythmias in ambulatory patients, 816, 927
  - atrioventricular
    - and conduction system in systemic lupus erythematosus, 299
    - complete, and bifascicular block, 23
    - Mobitz type II, and electrophysiology of atrioventricular conduction, 421
    - paroxysmal, and second degree block, 421
    - second degree, pathophysiology of, 421
    - simulated by concealed His bundle extrasystoles, 288
  - fascicular, in hyperkalemia, 199
  - intra-His bundle, second degree, 421
  - left axis deviation and left anterior hemiblock in Japanese-American men, 809
  - sinoatrial
    - and potassium canrenoate, 413
    - retrograde, and premature ventricular contractions, 763
- Heart disease
- ischemic
    - and bilateral arteriosclerotic coronary arterial aneurysms, 315
    - and left ventricular diastolic compliance after bypass surgery, 11
    - blood platelet response to plasma from patients with, 204
    - left ventricular function in, 1
    - risk factors for, 514
- Heart disease
- ischemic
    - with congestive heart failure, variable hemodynamic responses to digoxin in, 461
    - prevention of, by control of risk factors, 330
    - rheumatic, and late systolic murmur of mitral insufficiency, 397
    - valvular, renal consequences of, 686
- Heart failure
- congestive
    - after valve replacement with Starr-Edwards prostheses, 716
    - and bacterial endocarditis with ruptured sinus of Valsalva and aorticocardiac fistula, 912
    - and precordial systolic honk, 85
    - and pulmonary vascular disease after surgical correction of transposition of great arteries, 107
    - and renal consequences of valvular heart disease, 886
    - and systemic lupus erythematosus, 305
    - in Hemophilus aphrophilus endocarditis, 72
    - in neonate with right coronary arterial-right ventricular fistula, 444
    - variable hemodynamic responses to digoxin in, 461
    - right-sided, and total removal of tricuspid valve, 481
    - severe ischemic, epinephrine in, 504
- Heart murmurs
- continuous, and internal mammary arteriovenous fistula, 103
  - in aortic origin of left pulmonary artery in tetralogy of Fallot, 324
  - in nonobstructive hypertrophic cardiomyopathy mimicking mitral stenosis, 89
  - machinery, and traumatic right coronary arterial-right atrial fistula, 439
  - pansystolic, and prolapse of posterior leaflet of mitral valve, 363
  - systolic
    - and prolapse of posterior leaflet of mitral valve, 363
    - honk due to tricuspid regurgitation, 85
    - late, and rheumatic mitral insufficiency, 397
- Heart rate
- and diagnosis and quantification of arrhythmias in ambulatory patients, 816, 927
  - during coronary angiography, 17
- Heart size and disc valve replacement, 740
- Heart sounds
- after valve replacement with Starr-Edwards prostheses, 716
  - and prosthetic valve dysfunction, 872
  - click, mid systolic, and prolapse of posterior leaflet of mitral valve, 363
  - ejection, and first heart sound, 346
  - first
    - and ejection sounds, 346
    - loud, with long-P-R intervals, 435
  - in aortic origin of left pulmonary artery in tetralogy of Fallot, 324
  - nonejection click, and late systolic murmur of mitral insufficiency, 397
  - pulmonary ejection, genesis of, 346
- Hemiblock, left anterior and right bundle branch block, H-V interval in, 23
- Hemodynamics
- after bypass surgery for ischemic heart disease, 11
  - after interatrial baffle procedure for dextrotransposition of great arteries, 660
  - after total removal of tricuspid valve without prosthetic replacement, 481
  - and acute digitalization in chronic cardiac failure, 461
  - and atrial pacing and isometric exercise in coronary artery disease, 785
  - and changes in ventricular contractility in intact circulation, 626
  - and cholesterol uptake, 559, 579
  - and clinical response to propranolol, 635
  - and digoxin in experimental acute myocardial infarction, 801
  - and drug administration after cardiac surgery, 656



# Hemodynamics

- and fractional rate of change of power during isovolumic contraction, 264
- and precordial honk due to tricuspid regurgitation, 85
- and prediction of ischemia in aortic stenosis, 778
- and rate of change of power during isovolumic contraction, 258
- and systolic transmural distribution of coronary blood flow, 904
- and traumatic right coronary arterial-right atrial fistula, 439
- during pain in Prinzmetal's variant angina, 683
- in chronic aortic valve disease, 725
- in coronary artery disease with and without myocardial infarction, 1
- in cor triatriatum, 59
- in hypertrophic subaortic stenosis with calcific aortic stenosis, 706
- in internal mammary arteriovenous fistula with communication to pulmonary vessels, 103
- in nonobstructive hypertrophic cardiomyopathy mimicking mitral stenosis, 89
- in right coronary arterial-right ventricular fistula, 444
- in subendocardial ischemia induced by tachycardia during coronary stenosis, 30
- of disc valve obstruction, 740
- of epinephrine in severe ischemic heart failure, 504
- of hyperkinetic heart in severe hypertension, 667
- of tazolol in experimental myocardial infarction, 619
- Hemolysis, intravascular, after valve replacement, diagnosis and management of, 740, 872
- Hemophilus aphrophilus endocarditis, 23 cases of, 72
- Hemosiderosis, renal, after disc valve replacement, 740
- Heroin addiction and surgical treatment of pseudomonas endocarditis of tricuspid valve, 481
- His bundle extrasystoles, concealed, in congenital heart disease, 288
- His bundle studies
  - after interatrial baffle procedure for dextrotransposition of great arteries, 660
  - and atrioventricular conduction and premature ventricular contractions, 763
  - in bifascicular block, 23
  - in hyperkalemia, 199
  - of digoxin and sinus nodal reentry in dog, 370
- His-Purkinje system, ischemic, conduction disorders and action potentials in, 421
- Hodgkin's disease and radiation-related pericarditis, 216
- Holter monitoring of arrhythmias, 816, 927
- Honk, precordial, due to tricuspid regurgitation, 85
- Honolulu Heart Study and left axis deviation and left anterior hemiblock in Japanese-American men, 809
- H-V interval in bifascicular block, 23
- Hyperemia, coronary, and dual isotope myocardial imaging, 380
- Hyperglycemia and risk of ischemic heart disease, 514
- Hyperkalemia
  - atrioventricular and intraventricular conduction in, 199
  - and heart block in systemic lupus erythematosus, 299
- Hyperlipidemia and risk of atherosclerosis, 542
- Hypertension
  - and first heart sound and ejection sounds, 346
  - and left axis deviation and left anterior hemiblock in Japanese-American men, 809
  - and risk factors
    - for atherosclerosis, 542
    - for coronary heart disease, 332
    - for ischemic heart disease, 514
  - and second generation electrocardiographic computer program, 597
  - hyperkinetic heart in, 667
  - in systemic lupus erythematosus, 305
  - in young adults, influence of race, sex and body weight on, 523

# Hypertension

- omnicardiogram in, 531
- pheochromocytoma and, 701
- pulmonary, and valve replacement with Starr-Edwards prostheses, 716
- Hypertrophy, asymmetric septal, mimicking mitral stenosis, 89
- Hypotension
  - and pheochromocytoma, 701
  - and practolol for supraventricular arrhythmias, 645
  - in acute myocardial infarction, 116
- Hypoxemia and myocardial necrosis after experimental coronary occlusion, 795
- Hypoxia, myocardial, and myocardial scintigraphy, 251
- Idiopathic hypertrophic subaortic stenosis, left ventricular outflow obstruction in, 337
- Indium-113m macroaggregated albumin, myocardial imaging with, 380
- Inotropic agents
  - after cardiac surgery, 656
  - and digoxin-induced arrhythmias, 413
  - and left ventricular function, 626
  - in severe ischemic heart failure, 504
  - tazolol, in experimental myocardial infarction, 619
- Insulative theory of atherogenesis, 542
- Internal mammary arteriovenous fistula with pulmonary communication, 103
- Inter-Society Commission for Heart Disease Resources, report on optimal resources for ultrasonic examination of the heart, 898
- Interventricular septum, echocardiographic wall motion of abnormal, 679
- after valvular heart surgery, 473
- Ischemia
  - myocardial (*see* Myocardial ischemia)
  - regional, identified by dual isotope myocardial imaging, 380
  - subendocardial, tachycardia-induced, in coronary stenosis, 30
- Ischemic heart disease (*see* Heart disease, ischemic)
- Isoproterenol
  - and conduction system in systemic lupus erythematosus, 299
  - and ischemia in aortic stenosis, 778
  - and tazolol in experimental myocardial infarction, 619
  - early after cardiac surgery, 656
- Japanese-American men, left axis deviation and left anterior hemiblock in, 809
- Kidney in valvular heart disease, 886
- Lactate metabolism and ischemia in aortic stenosis, 778
- Leukocytosis and pheochromocytoma, 701
- Lipids, serum
  - and atherogenesis, 542
  - and risk of coronary artery disease, 332
  - and risk of ischemic heart disease, 514
  - aortic mitochondrial synthesis of, and response to cholesterol feeding, 567
- Lipoproteins, serum, and atherogenesis, 542
- low and very low density, 559
- Lung disease, chronic obstructive, and second generation electrocardiographic computer program, 597
- Lupus erythematosus, systemic
  - and heart block, conduction system in, 299
  - causing mitral regurgitation, 305
  - myocardial infarction due to coronary atherosclerosis in, 309



- Medical vs. surgical therapy in aortic and mitral valve disease, 221, 234
- Methaqualone and anticoagulant inhibition, 67
- Microsphere studies
  - and coronary flow during tachycardia, 30
  - and transmural distribution of coronary blood flow, 904
- Mitochondria, aortic, and lipid synthesis and cholesterol feeding, 567
- Mitral anulus, calcification of, and systemic lupus erythematosus, 305
- Mitral insufficiency, rheumatic, and late systolic heart murmur, 397
- Mitral regurgitation caused by systemic lupus erythematosus, 305
- Mitral stenosis
  - and first heart sound and ejection sounds, 346
  - atypical posterior leaflet motion in echocardiogram in, 675
  - mimicked by nonobstructive hypertrophic cardiomyopathy, 89
  - vs. mitral regurgitation, natural history of, 221
- Mitral valve
  - in *Hemophilus aphrophilus* endocarditis, 72
  - in obstructive asymmetric septal hypertrophy, 337
- Mitral valve disease
  - natural history of, 221
  - rheumatic, surgery for, 234
- Mitral valve leaflets
  - and "true" vs. "false" mitral stenosis, 675
  - echocardiographic motion of, in atrioventricular canal defect, 54
  - prolapse
    - and late systolic murmur of mitral insufficiency, 397
    - and secundum atrial septal defect, 363
- Multivariate analysis in second generation electrocardiographic computer program, 597
- Myocardial fibers, disarrangement of, in primary cardiomyopathy in identical twins, 97
- Myocardial imaging
  - dual isotope, with indium-113m- and technetium-99m-macroaggregated albumin, 380
  - negative vs. positive, and technetium-99m polyphosphate, 390
- Myocardial infarction
  - acute
    - and arteriograms in women under age 50 years, 211
    - and left axis deviation and left anterior hemiblock in Japanese-American men, 809
    - and myocardial scintigraphy, 251
    - and pheochromocytoma, 701
    - and right ventricular infarction, 116
    - and surgical vs. medical treatment of left anterior descending coronary artery disease, 836
    - and transient Q waves in Prinzmetal's variant angina, 691
    - and ventricular compliance after bypass surgery, 11
    - detected by technetium-99m polyphosphate, 390
    - due to coronary atherosclerosis in systemic lupus erythematosus, 309
    - natural history of S-T segment elevation after, 609
    - nonparoxysmal junctional tachycardia detected by computer in, 824
    - radionuclide techniques in, 112
    - recurrent, and angina in a woman with normal coronary angiograms, 923
    - risk factors for, 514
    - transmural
      - and patency of aortocoronary bypass grafts, 767
      - during pregnancy, 448
    - unipolar cathodal vs. bipolar stimulation during, 37
  - experimental
    - digitalis in, 801
    - tazolol in, 619
  - prior, and coronary artery disease, left ventricular function in patients with, 1
- Myocardial ischemia
  - and digitalis, 801
  - and hypoxemia after experimental coronary occlusion, 795
- Myocardial ischemia
  - and hypoxia, and myocardial scintigraphy, 251
  - in aortic stenosis, hemodynamic prediction of, 778
  - in Prinzmetal's variant angina, 683, 691
  - unipolar cathodal vs. bipolar stimulation during, 37
- Myocardial metabolism in subendocardial ischemia during tachycardia, 30
- Myocardial revascularization
  - (see also Surgery, aortocoronary saphenous vein bypass)
  - and diabetic patient, 774
  - and ventricular compliance, 30
  - for refractory ventricular arrhythmias, 696
- Myocarditis and pheochromocytoma, 701
- Myofibrils in chronic aortic valve disease, 725
- Neurologic disorders and pheochromocytoma, 701
- Noise transmission and second generation electrocardiographic computer program, 597
- Obesity
  - and risk of coronary artery disease, 332
  - and risk of ischemic heart disease, 514
- Omniscardiogram for detecting heart disease, 531
- Oxygen and myocardial ischemia after experimental coronary occlusion, 795
- Pacemaker, sinus, and heart rate during angiography, 17
- Pacing
  - atrial
    - and abnormal segmental contraction velocity in coronary artery disease, 785
    - sinus nodal function evaluated by, 492
  - competitive, ventricular, and unipolar cathodal vs. bipolar stimulation, 37
  - unipolar cathodal vs. bipolar, 37
- Papillary muscles and obstructive asymmetric septal hypertrophy, 337
- Parietal band vs. crista supraventricularis in tetralogy of Fallot, 402
- Passive elastic modulus after bypass surgery for ischemic heart disease, 11
- Pediatric cardiology (see also Congenital defects and Congenital heart disease)
  - body weight in youth and prevention of hypertension in young adults, 523
  - cor triatriatum, 20 cases of, 59
  - double outlet right ventricle [S.D.L.] with subaortic ventricular septal defect and pulmonary stenosis, 42
  - echocardiography in atrioventricular canal defect, clinical spectrum of, 54
  - electrocardiographic evidence of left ventricular hypertrophy in normal children, 278
  - late systolic murmur of mitral insufficiency, 397
  - primary cardiomyopathy in identical twins, 97
  - progressive pulmonary vascular disease after surgical correction of transposition of great arteries with intact ventricular septum, 107
  - right coronary arterial-right ventricular fistula in neonate with fatal congestive heart failure, 444
- Pericardial friction rubs in 100 patients, 357
- Pericardiocentesis and radiation-related pericarditis, 216
- Pericarditis
  - and pericardial friction rubs in 100 patients, 357
  - radiation-related, 216
- Peripheral vascular disease and pheochromocytoma, 701
- Phenobarbital and anticoagulant inhibition, 67
- Pheochromocytoma
  - and hypertensive crises, 701
  - vs. hyperkinetic heart in severe hypertension, 667

# SUBJECT INDEX

- Phlebotomy in cyanotic congenital heart disease, 831
- Phonocardiogram
  - after valve replacement, 872
  - and first heart sound and ejection sounds, 348
  - and pericardial friction rubs in 100 patients, 357
  - in nonobstructive hypertrophic cardiomyopathy mimicking mitral stenosis, 89
- Phospholipids, turnover of, in rat aortic smooth muscle cells in culture, 572
- Physical inactivity and risk of ischemic heart disease, 514
- Platelet aggregation theory of atherogenesis, 542
- Platelet dysfunction and bleeding and red cell volume reduction, 831
- Polycythemia and cyanotic congenital heart disease, red cell volume reduction in, 831
- Polyphosphate, technetium-99m, acute myocardial infarction detected by, 390
- Posterior wall velocity and ventricular performance, 588
- Postperfusion syndrome after valve replacement, diagnosis and management of, 872
- Postpericardiotomy syndrome after valve replacement, diagnosis and management of, 872
- Potassium
  - and heart block in systemic lupus erythematosus, 299
  - increased, atrioventricular and intraventricular conduction in, 199
- Potassium canrenoate for digoxin-induced arrhythmias, 413
- P-R interval
  - in hyperkalemia, 199
  - long, with loud first heart sound, 435
  - short, and normal QRS, altered refractory periods in, 487
- Practolol for supraventricular arrhythmias in acute illnesses, 645
- Pregnancy, acute transmural myocardial infarction during, 448
- Preload and ejection and isovolumic phase measures of contractility, 626
- Premature ventricular depolarizations
  - and potassium canrenoate, 413
  - quantification of, in ambulatory patients, 816
- Pressure-time index and ischemia in aortic stenosis, 778
- Problem-oriented approach and second generation electrocardiographic computer program, 597
- Propranolol
  - and ejection and isovolumic phase measures of contractility, 626
  - and hyperkinetic heart in severe hypertension, 667
  - noninvasive assessment of clinical response to, 635
- Protein, plasma, and atherogenesis, 542
- Prothrombin test monitoring and warfarin-sedative interactions, 67
- Pulmonary artery, left, aortic origin of, in tetralogy of Fallot, 324
- Pulmonary outflow tract in double outlet right ventricle [S,D,L], 42
- Pulmonary stenosis and subaortic ventricular septal defect with double outlet right ventricle, 42
- Pulmonary vascular disease
  - after surgical correction of transposition of great arteries with intact ventricular septum, 107
  - and Mustard procedure for dextrotransposition of great arteries, 660
- Pulmonary vessels, internal mammary arteriovenous fistula with communication to, 103
- QRS axis, left deviation of, and left anterior hemiblock in Japanese-American men, 809
- QRS complex and ambulatory arrhythmia monitoring, 816
- Q waves
  - and ventricular asynergy, 615
  - transient, in Prinzmetal's variant angina 691
- Race and blood pressure behavior in young adults, 523
- Radiation therapy and pericarditis, 216
- Radiocardiography in coronary artery disease, 112
- Radionuclide studies
  - and dual isotope myocardial imaging, 380
  - in coronary artery disease, 112
  - in myocardial ischemia, 251
  - to detect acute myocardial infarction, 390
- Refractory periods, altered, in short P-R interval and normal QRS complex, 487
- Renin levels and hyperkinetic heart in severe hypertension, 667
- Reviews in cardiology, 194, 453, 592, 930
- Rheumatic mitral valve disease, surgery and, 234
- Risk factors
  - for atherosclerosis, 542
  - for coronary artery disease, 332
  - for myocardial infarction and death due to ischemic heart disease, 514
  - prevention of heart disease by control of, 330
- R-R interval plotting system in diagnosis and quantification of arrhythmias in ambulatory patients, 816
- R wave detection and computer-assisted detection of arrhythmias in acute myocardial infarction, 824
- Saphenous veins and cholesterol uptake in arterial wall, 579
- Scintigraphy, myocardial, and myocardial hypoxia and ischemia, 251
- Secobarbital and anticoagulant inhibition, 67
- Sedatives, interaction of, with warfarin, 67
- Segment length, ventricular, and digitals in acute myocardial infarction, 801
- Serum glutamic oxaloacetic transaminase and postoperative transmural myocardial infarction, 767
- 7-ketocholesterol inhibition of cholesterol uptake, 579
- Sex
  - differences, and blood pressure behavior in young adults, 523
  - female, under age 50, coronary arteriograms in, 211
  - male, and Hemophilus aphrophilus endocarditis, 72
- Shunt, left to right, in cor triatriatum, 59
- Sick sinus syndrome and sinus nodal function, 492
- Sinus arrhythmias and potassium canrenoate, 413
- Sinus bradycardia, potassium canrenoate for, 413
- Sinus node
  - blood supply to, and heart rate during angiography, 17
  - function of, evaluated by premature atrial stimulation and atrial pacing, 492
  - reentry, and digoxin, 370
- Situs solitus and double outlet right ventricle [S,D,L], 42
- Smoking and risk of ischemic heart disease, 514
- Sodium absorption and renal consequences of valvular heart disease, 886
- Soldactone for digoxin-induced arrhythmias in conscious dogs, 413
- S-T segment elevation
  - after acute myocardial infarction, natural history of, 609
  - and myocardial necrosis after experimental coronary occlusion, 795
  - and tazolol in experimental myocardial infarction, 619
  - and ventricular aneurysm, cardiomyopathy, Q waves and, 615
  - in Prinzmetal's variant angina, 683, 691
- Subaortic stenosis, hypertrophic, with calcific aortic stenosis, 706
- Surgery
  - and aortic origin of left pulmonary artery in tetralogy of Fallot, 324
  - and bacterial endocarditis with ruptured sinus of Valsalva and aortic cardiac fistula, 912
  - and natural history of aortic valve disease, 221
  - and natural history of mitral valve disease, 221
  - and natural history of rheumatic mitral and aortic valve disease, 234
  - and nonobstructive hypertrophic cardiomyopathy mimicking mitral stenosis, 89
  - aortic valve replacement
    - in Hemophilus aphrophilus endocarditis, 72

# Surgery

- aortic valve replacement
  - with Starr-Edwards prosthesis, long-term follow-up, 228
- aortocoronary saphenous vein bypass
  - and transmural myocardial infarction, 767
  - for bilateral arteriosclerotic coronary arterial aneurysms, 315
  - for ischemic heart disease, left ventricular diastolic compliance after, 11
  - for Prinzmetal's variant angina, 683
  - in diabetic patients with coronary arteriosclerosis, 774
  - vs. medical treatment of left anterior descending coronary artery disease, 836
- for atrial septal defect with prolapse of posterior leaflet of mitral valve, 363
- for coronary arterial-right atrial fistula, traumatic, 439
- for cor triatriatum, 59
- for coronary artery disease
  - and radionuclide techniques, 112
  - isometric exercise and atrial pacing prior to, 785
- for cyanotic congenital heart disease, red cell volume reduction preceding, 831
- for dextrotransposition of great arteries with interatrial baffle procedure, 660
- for double outlet right ventricle, 116
  - with pulmonary stenosis and subaortic ventricular septal defect, 42
- for hypertrophic subaortic stenosis with calcific aortic stenosis, 706
- for internal mammary arteriovenous fistula, 103
- for pheochromocytoma with hypertensive crisis, 701
- for radiation-related pericarditis, 216
- for solitary interruption of aortic arch, 271
- for transposition of great arteries, progressive pulmonary vascular disease after, 107
- for valve disease, commissurotomy versus valve replacement, 740
- interatrial baffle procedure for dextrotransposition of great arteries, 660
- mitral commissurotomy, echocardiographic studies of left ventricular wall motion and dimensions after, 473
- Mustard procedure
  - for dextrotransposition of great arteries, 660
  - for transposition of the great arteries, 107
- myocardial infarction during, and myocardial imaging, 390
- open heart, isoproterenol and dopamine after, 656
- tricuspid insufficiency after, echocardiogram in, 679
- tricuspid valvectomy without prosthetic replacement, hemodynamic consequences of, 481
- valve replacement
  - (see also specific valve and Symposium on the Current Status of Valve Replacement)
  - aortic, pulmonary valve autograft for, 866
  - diagnosis and management of complications after, 872
  - early, and survival data, 711, 716
  - echocardiographic studies of left ventricular wall motion and dimensions after, 473
  - mitral
    - for mitral regurgitation caused by systemic lupus erythematosus, 305
    - with Starr-Edwards prosthesis, long-term follow-up, 228
    - with ball valve prostheses, 843
    - with disc prosthesis, cardiac pathology after, 740
    - with tissue valves, 866
  - valvulotomy, mitral, and mitral valve disease, 234
  - ventricular aneurysmectomy after epicardial mapping, 696
  - vs. medical treatment of left anterior descending coronary artery disease, 836
- Sympathectomy, chemical, and sinus nodal response to premature atrial stimulation and atrial pacing, 492

- Symposium on Atherosclerosis and Metabolism of the Arterial Wall, 541-587
  - Aortic mitochondrial synthesis of lipid and its response to cholesterol feeding, 567
  - Introduction, 541
  - Lipid metabolism in perfused human and dog coronary arteries, 579
  - Mechanisms of cholesterol accumulation in the arterial wall, 559
  - Pathogenetic mechanisms in atherosclerosis, 542
  - Turnover of phospholipids in rat aortic smooth muscle cells in culture, 572
- Symposium on Current Status of Valve Replacement. Part I, 710-760; Part II, 843-897
  - Ball valve prostheses: current appraisal of late results, 843
  - Cardiac pathology after valve replacement by disc prosthesis. A study of 61 necropsy patients, 740
  - Current status of the Ball, Bjork-Shiley, Braunwald-Cutter, Lillehei-Kaster and Smeloff-Cutter cardiac valve prostheses, 855
  - Diagnosis and management of complications of prosthetic heart valves, 872
  - Hemodynamic changes after valve replacement with Starr-Edwards prostheses, 716
  - Introduction, 710
  - Myocardial ultrastructure in patients with chronic aortic valve disease, 725
  - Renal consequences of valvular heart disease, 886
  - Tissue valves, 866
  - Valve replacement—a perspective, 711
- Symposium on the Effects of Surgical Treatment on the Natural History of Acquired Heart Disease, Part II. Aortic and Mitral Valve Disease, 221-242
  - Influence of surgery on the natural history of rheumatic mitral and aortic valve disease, 234
  - Long-term follow-up of isolated replacement of the aortic or mitral valve with the Starr-Edwards prosthesis, 228
  - Natural history of aortic and mitral valve disease, 221
- Systolic time intervals
  - and hyperkinetic heart in severe hypertension, 667
  - and therapeutic serum levels of digoxin, 469
  - in assessment of clinical response to propranolol, 635
- Tachyarrhythmias, paroxysmal, diagnosis and quantification of, in ambulatory patients, 816
- Tachycardia
  - and sinus nodal function, 492
  - and subendocardial ischemia in coronary stenosis, 30
  - atrial, practolol for, 645
  - nonparoxysmal junctional, in acute myocardial infarction, computer-assisted detection of, 824
  - ventricular, with ventricular aneurysm, 696
- Tazoid in experimental myocardial infarction, 619
- Technetium-99m-macroaggregated albumin, myocardial imaging with, 380
- polyphosphate, detection of acute myocardial infarction by, 390
- Tension indexes and digitalis in acute myocardial infarction, 801
- Tension-time index and ischemia in aortic stenosis, 778
- Teratogenic factor in primary cardiomyopathy in identical twins, 97
- Tetralogy of Fallot
  - and cor triatriatum, 59
  - morphometric and geometric study of, 402
  - with aortic origin of left pulmonary artery, 324
- Thromboembolism
  - after valve replacement, 843
  - diagnosis and management of, 872
  - and recurrent myocardial infarction and angina pectoris, 923
  - and surgery for bilateral arteriosclerotic coronary arterial aneurysms, 315



# SUBJECT INDEX

- Thromboembolism
  - and valve prostheses, 855
  - with tissue valve replacement, 866
- Thrombogenic theory of atherogenesis, 542
- Thrombus after disc valve replacement, 740
- Training
  - for echocardiography, 898
  - of cardiologists, 761
- Transposition of great arteries
  - and double outlet right ventricle [S,D,L], 42
  - corrected, and cor triatriatum, 59
  - progressive pulmonary vascular disease after surgical correction of, 107
- Trauma, and right coronary arterial-right atrial fistula, 439
- Tricuspid insufficiency, surgically created, echocardiogram in, 679
- Tricuspid regurgitation, precordial honk due to, 85
- Tricuspid valve
  - echocardiographic motion in atrioventricular canal defect, 54
  - total removal of, without prosthetic replacement, 481
- Trigeminy, diagnosis and quantification of, in ambulatory patients, 816
- Twins, identical, primary cardiomyopathy in, 97
- Ultrasound studies
  - (see also Echocardiography)
  - in cardiac diagnosis, ICHD guidelines for, 898
- Ultrastructure, myocardial, in chronic aortic valve disease, 725
- Uremia and pericardial friction rubs, 357
- Valsalva, sinus of
  - aneurysm of, and surgery for Hemophilus aphrophilus endocarditis, 72
  - ruptured, and bacterial endocarditis, 912
  - unruptured congenital aneurysm of, 918
- Valve disease, uncorrected, and disc valve replacement, 740
- Valve prostheses
  - (see also Surgery, valve replacement)
  - Beall, 855
  - Bjork-Shiley, 855
  - Braunwald-Cutter, 855
  - caged ball, hemodynamic changes after insertion, 716
  - cloth-covered, 843
  - composite strut, 843
  - diagnosis and management of complications of, 872
  - disc, cardiac pathology after insertion, 740
  - Lillehei-Kaster, 855
  - perspective on, 711
  - Smeloff-Cutter, 855
  - Starr-Edwards, 843
  - hemodynamic changes after insertion, 716
- Valves, cardiac, and first heart sound and ejection sounds, 346
- Valvular insufficiency, acute, surgery for, 221
- Ventricle
  - left
    - and isometric exercise and atrial pacing in coronary artery disease, 785
    - echocardiographic dimensions of
      - after valvular heart surgery, 473
      - effect of transducer placement on, 537
    - in chronic aortic valve disease, 725
    - outflow obstruction of, in idiopathic hypertrophic subaortic stenosis, 337
  - right
    - and echocardiogram in tricuspid insufficiency, 675
    - double outlet
      - surgical correction of, 116
      - with subaortic ventricular septal defect and pulmonary stenosis, 42
- Ventricle
  - right
    - in tetralogy of Fallot, 402
- Ventricular compliance, left, after bypass surgery for ischemic heart disease, 11
- Ventricular contraction, Q waves and, 615
- Ventricular dysfunction, left, after acute myocardial infarction, digitalis in, 801
- Ventricular ectopic beats after epinephrine in severe ischemic heart failure, 504
- Ventricular fibrillation
  - after chest trauma following alcohol consumption, 243
  - due to passage of a Swan-Ganz catheter, 589
  - threshold
    - and unipolar cathodal vs. bipolar stimulation, 37
    - during respiratory failure, aminophylline and, 376
- Ventricular filling after bypass surgery for ischemic heart disease, 11
- Ventricular function
  - after valve replacement, 711
  - with Starr-Edwards prostheses, 716
  - and isovolumic fractional rate of change of power, 264
  - and posterior wall velocity, 588
  - and rate of change of power during isovolumic contraction, 258
- left
  - after chest trauma following alcohol consumption, 243
  - after valvular heart surgery, echocardiogram for monitoring, 473
  - and alterations in preload, afterload and contractility, 626
  - and atrial septal defect with prolapse of posterior leaflet of mitral valve, 363
  - in coronary artery disease, 1
  - in Prinzmetal's variant angina, 683
  - noninvasive assessment of, and response to propranolol, 635
- Ventricular hypertrophy, left, echocardiogram in, 278
- Ventricular outflow, left, obstruction and hypertrophic subaortic stenosis with calcific aortic stenosis, 706
- Ventricular premature beats
  - and atrioventricular conduction, 763
  - pacemaker-induced, and ventricular fibrillation, 37
- Ventricular pressure
  - end-diastolic, left, and ventricular function in coronary artery disease, 1
  - left peak developed, as predictor of intramyocardial pressure, 904
- Ventricular rate and "therapeutic" serum levels of digoxin in atrial fibrillation, 651
- Ventricular septal defect
  - and cor triatriatum, 59
  - subaortic, and pulmonary stenosis with double outlet right ventricle, 42
- Ventricular septal hypertrophy, asymmetric
  - left ventricular outflow tract obstruction in, 337
  - with calcific aortic stenosis, 706
- Ventricular septum, intact, and surgically corrected transposition of great arteries, pulmonary vascular disease after, 107
- Ventricular volume, left end-diastolic, and ventricular function in coronary artery disease, 1
- Volume loading and isovolumic and ejection phase indexes of contractility, 626
- Warfarin
  - in valve replacement, 711, 843
  - interactions with five sedatives, 67
- Wenckebach phenomenon and second degree atrioventricular block, 421
- Women under age 50, coronary arteriograms in, 211







# The American Journal of CARDIOLOGY®

Volume 36

July to December 1975

## Editor-in-Chief

SIMON DACK, MD, New York

## Senior Assistant Editors

RAYMOND HARRIS, MD, Albany, N.Y.  
LESLIE A. KUHN, MD, New York

## Managing Editor

RUTH R. OHMAN

## Associate Editors

EUGENE BRAUNWALD, MD, Boston, Mass.  
E. GREY DIMOND, MD, Kansas City, Mo.  
GEORGE C. GRIFFITH, MD, Los Angeles

## Assistant Editors

IRA J. GELB, MD, New Rochelle, N.Y.  
MELVIN KAHN, MD, New York

## Assistant Managing Editor

GABRIELLE HAYES

## Publisher

LOUIS F. LE JACO

## EDITORIAL CONSULTANTS

CRAWFORD W. ADAMS, MD, Nashville  
FORREST H. ADAMS, MD, Los Angeles  
ALBERTO BENCHIMOL, MD, Phoenix  
S. GILBERT BLOUNT, Jr., MD, Denver  
SIDNEY BLUMENTHAL, MD, Miami  
ROBERT A. BRUCE, MD, Seattle  
AGUSTIN CASTELLANOS, Jr., MD, Miami  
ERNEST CRAIGE, MD, Chapel Hill, N. C.  
JAMES E. CROCKETT, MD, Kansas City, Mo.  
ANTHONY N. DAMATO, MD, Staten Island  
HAROLD T. DODGE, MD, Seattle  
LEONARD S. DREIFUS, MD, Philadelphia  
MARVIN I. DUNN, MD, Kansas City, Kans.  
JESSE E. EDWARDS, MD, St. Paul  
DONALD B. EFFLER, MD, Cleveland  
MARY ALLEN ENGLE, MD, New York  
HARVEY FEIGENBAUM, MD, Indianapolis  
CHARLES FISCH, MD, Indianapolis  
NOBLE O. FOWLER, MD, Cincinnati  
RAY W. GIFFORD, Jr., MD, Cleveland  
ALLAN V. N. GOODYER, MD, New Haven  
KALMAN GREENSPAN, PhD, Indianapolis

DONALD C. HARRISON, MD, Stanford, Calif.  
MICHAEL V. HERMAN, MD, New York  
JAMES C. HUNT, MD, Rochester, Minn.  
J. WILLIS HURST, MD, Atlanta  
THOMAS N. JAMES, MD, Birmingham  
MELVIN P. JUDKINS, MD, Loma Linda, Calif.  
ARNOLD M. KATZ, MD, New York  
JOHN D. KEITH, MD, Toronto  
HARVEY G. KEMP, Jr., MD, New York  
JOHN W. KIRKLIN, MD, Birmingham  
CHARLES E. KOSSMANN, MD, Memphis  
JAMES J. LEONARD, MD, Pittsburgh  
HAROLD D. LEVINE, MD, Boston  
ROBERT S. LITWAK, MD, New York  
DEAN T. MASON, MD, Davis, Calif.  
RASHID A. MASSUMI, MD, Davis, Calif.  
DWIGHT MCGOON, MD, Rochester, Minn.  
HENRY D. MCINTOSH, MD, Houston  
ANDREW GLENN MORROW, MD, Bethesda  
ARTHUR J. MOSS, MD, Los Angeles  
JOHN O. PARKER, MD, Kingston, Ontario, Canada  
JOSEPH K. PERLOFF, MD, Philadelphia  
RICHARD L. POPP, MD, Stanford, Calif.

WILLIAM C. ROBERTS, MD, Bethesda  
KENNETH M. ROSEN, MD, Chicago  
MAURICIO B. ROSENBAUM, MD,  
Buenos Aires, Argentina  
JOHN ROSS, Jr., MD, La Jolla, Calif.  
PHILIP SAMET, MD, Miami Beach  
LEONARD SCHERLUS, MD, Baltimore  
ROBERT C. SCHLANT, MD, Atlanta  
ARNOLD SCHWARTZ, PhD, Houston  
BERNARD L. SEGAL, MD, Philadelphia  
ARTHUR SELZER, MD, San Francisco  
RALPH SHABETAI, MD, Lexington, Ky.  
EDGAR SOWTON, MD, London  
JAMES F. SPANN, Jr., MD, Philadelphia  
LEONARD STEINFELD, MD, New York  
BORYS SURAWICZ, MD, Lexington, Ky.  
H. J. C. SWAN, MD, Los Angeles  
NORMAN S. TALNER, MD, New Haven  
L. H. S. VAN MEROP, MD, Gainesville, Fla.  
RICHARD VAN PRAAGH, MD, Boston  
ARNOLD M. WEISSLER, MD, Detroit  
NINETTE K. WENGER, MD, Atlanta

## PUBLICATIONS COMMITTEE, AMERICAN COLLEGE OF CARDIOLOGY

JOHN ROSS, Jr., MD, San Diego  
Chairman

W. GERALD AUSTEN, MD, Boston  
LIONEL M. BARGERON, Jr., MD, Birmingham  
SIMON DACK, MD (ex officio), New York

PETER L. FROMMER, Bethesda  
D. LUKE GLANCY, MD, New Orleans  
DOUGLAS P. ZIPES, Indianapolis

Volume 36 / Copyright © 1975

Dun - Donnelley Publishing Corporation  
666 Fifth Avenue, New York, New York 10019



All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage retrieval system, without written permission of the copyright owner.

Printed in the United States of America

# CONTENTS: VOLUME 36

JULY 1975

## CLINICAL STUDIES

- 1 **Echocardiography in Acute Myocardial Infarction.** Betty C. Corya, Susan Rasmussen, Suzanne B. Knoebel and Harvey Feigenbaum, with the technical assistance of Mary Jo Black
- 11 **Echocardiography in Aortic Root Dissection and Dilatation.** Richard W. Moothart, Richard D. Spangler and S. Gilbert Blount, Jr.
- 17 **Echocardiographic Criteria for Aortic Root Dissection.** Owen R. Brown, Richard L. Popp and Frank E. Kloster
- 21 **Echocardiographic Differentiation of Infundibular from Valvular Pulmonary Stenosis.** Arthur E. Weyman, James C. Dillon, Harvey Feigenbaum and Sonia Chang
- 27 **Radiographic Appearance of the Thorax in Systolic Click-Late Systolic Murmur Syndrome.** Carl P. Bon Tempo, James A. Ronan, Jr., Antonio C. de Leon, Jr. and Homer L. Twigg
- 32 **Thoracic Skeletal Abnormalities in Idiopathic Mitral Valve Prolapse.** Joseph Salomon, Pravin M. Shah and Robert A. Heinle

## EXPERIMENTAL STUDIES

- 37 **Termination of Ventricular Fibrillation in Dogs by Depolarizing a Critical Amount of Myocardium.** Douglas P. Zipes, John Fischer, Robert M. King, Ann deB. Nicoll and Walter W. Jolly
- 45 **Influence of Sympathetic Tone on Ventricular Fibrillation Threshold During Experimental Coronary Occlusion.** Bernard R. Klinks, Mary Jo Burgess and J. A. Abildskov
- 50 **Effect of Manganese Chloride and Verapamil on Automaticity of Digitalized Purkinje Fibers.** Warren W. Tse and Jack Han

## METHODS

- 56 **Use of a Balloon-Tipped Flotation Electrode Catheter for Cardiac Monitoring.** Kanu Chatterjee, H. J. C. Swan, William Ganz, Richard Gray, Hannan Loebel, James S. Forrester and David Chonette
- 62 **Retrograde Catheterization of the Left Atrium in Idiopathic Hypertrophic Subaortic Stenosis.** Bert Wong, Rene A. Langou, Lawrence S. Cohen and Steven Wolfson

## PEDIATRIC CARDIOLOGY

- 67 **Right Ventricular Volume in Congenital Heart Disease.** Elizabeth A. Fisher, Ira W. DuBrow and Alois R. Hastreiter

## REVIEWS

- 76 **Advances in Clinical Vectorcardiography.** Alberto Benchimol and Kenneth B. Desser

## DIAGNOSTIC SHELF

- 88 **Pseudomalfuction of a Ball Mitral Valve Prosthesis in the Presence of Paravalvular Aortic Regurgitation.** Milton J. Sands, Thomas H. Kreulen, Michael T. McDonough, Moneim A. Fadali and James F. Spann
- 91 **Limitations of the Surface Electrocardiogram in Diagnosis of Atrial Arrhythmias. Further Observations on Dissimilar Atrial Rhythms.** Delon Wu, Pablo Denes, Fernando Amat y Leon, Ramesh C. Chhablani and Kenneth M. Rosen

## CASE REPORTS

- 98 **"Paradoxical" Prolongation of Sinus Nodal Recovery Time After Atropine in the Sick Sinus Syndrome.** James A. Reiffel, J. Thomas Bigger and Elsa-Grace V. Giardina
- 105 **Demand Pacemaker Arrhythmias Caused by Intermittent Incomplete Electrode Fracture. Diagnosis with Testing Magnet.** Philippe Coumel, Jacques Mugica and S. Serge Barold

## EDITORIALS

- 110 **Etiology of the Mitral Valve Prolapse-Click Syndrome.** Robert M. Jeresaty
- 114 **Left Ventricular Volume Measurement by Echocardiography: Fact or Fiction?** Joseph W. Linhart, Gary S. Mintz, Bernard L. Segal, Nobuyoshi Kawai and Morris N. Kotler

## SPECIAL DEPARTMENTS

- 119 **Letters to the Editor**  
Surgical vs. Medical Therapy in Unstable Angina—Mizgala et al.  
Life Units in Coronary Artery Disease—Tofler and Reeves  
Echocardiogram in d-Transposition of Great Vessels—Pacquet and Mullins
- 122 **Reviews in Cardiology**
- 123 **Book Reviews**
- 124 **American College of Cardiology News**  
President's Page  
Norms for Use in the Peer Review of Selected In-Hospital Cardiovascular Diagnoses  
Calendar of Continuing Medical Education Programs



AUGUST 1975

## CLINICAL STUDIES

- 131 **Left Main Coronary Arterial Obstruction: Long-Term Follow-Up of 141 Nonsurgical Cases.** Juan S. Lim, William L. Proudfit and F. Mason Sones, Jr.
- 136 **Left Main Coronary Artery Disease. Risks of Angiography, Importance of Coexisting Disease of Other Coronary Arteries and Effects of Revascularization.** Henry DeMots, Lawrence I. Bonchek, Josef Bösch, Richard P. Anderson, Albert Starr and Shahbudin H. Rahimtoola
- 142 **Variant Angina Pectoris: Clinical and Anatomic Spectrum and Results of Coronary Bypass Surgery.** Samuel J. Shubrooks, Jr., John M. Bete, Adolph M. Hutter, Jr., Peter C. Block, Mortimer J. Buckley, Willard M. Daggett and Eldred D. Mundth
- 148 **Oxygen Delivery, Anoxic Metabolism and Hemoglobin Oxygen Affinity ( $P_{50}$ ) in Patients with Acute Myocardial Infarction and Shock.** Protasio L. da Luz, Jose M. Cavanilles, Sybil Michaels, Max Harry Weil and Herbert Shubin
- 155 **Measurement of S-T Segment Elevation in Acute Myocardial Infarction in Man. Comparison of a Precordial Mapping Technique and the Frank Vector System.** Toshio Akiyama, Morrison Hodges, Theodore L. Biddle, Barbara Zawrotny and Catherine Vangellow
- 163 **Reappearance of Anterior QRS Forces After Coronary Bypass Surgery. An Electrovectorcardiographic Study.** Howard J. Zeft, H. David Friedberg, James F. King, Jack C. Manley, John H. Huston and W. Dudley Johnson
- 169 **Significant Sex Differences in the Correlation of Electrocardiographic Exercise Testing and Coronary Arteriograms.** Michael H. Sketch, Syed M. Mohiuddin, Joseph D. Lynch, Allen E. Zancka and Vincent Runco
- 174 **Comparison of Angiographic and Postmortem Findings in Patients with Coronary Artery Disease.** Jared N. Schwartz, Yihong Kong, Donald B. Hackel and Alan G. Bartel

## EXPERIMENTAL STUDIES

- 179 **Effect of Practolol on Left Ventricular Dimensions During Coronary Occlusion.** Jon Lekven
- 185 **Effect of Graded Reductions in Regional Coronary Perfusion on Regional and Total Cardiac Function.** H. L. Wyatt, James S. Forrester, John V. Tyberg, Steven Goldner, Samuel E. Logan, William W. Parmley and H. J. C. Swan

## METHODS

- 193 **Diastolic Compliance of the Left Ventricle in Man.** William H. Gaasch, Miguel A. Quinones, Efraim Walisser, Hans G. Thiel and James K. Alexander

## REPORTS ON THERAPY

- 202 **Hemodynamic Effect of Dobutamine in Patients with Severe Heart Failure.** Nasim Akhtar, Esteban Mikulic, Jay N. Cohn and M. Hafeez Chaudhry

- 206 **Effects of Isosorbide Dinitrate on the Response to Atrial Pacing in Coronary Heart Disease.** Robert J. Steele, Gary W. Burggraf and John O. Parker

## SYMPOSIUM ON REPERFUSION DURING ACUTE MYOCARDIAL INFARCTION. PART I.

- 211 **Introduction.** Samuel Meerbaum and Elliot Corday
- 214 **Alterations in Myocardial Hydrogen Ion Concentration After Temporary Coronary Occlusion: A Sign of Irreversible Cell Damage.** Arno Krug
- 218 **Mitochondrial Function, Oxygen Extraction, Epicardial S-T Segment Changes and Trilabeled Digoxin Distribution After Reperfusion of Ischemic Myocardium.** James J. Kane, Marvin L. Murphy, Joe K. Bissett, Neil deSoyza, James E. Doherty and Karl D. Straub
- 225 **Experimental Coronary Arterial Occlusion and Release. Effects on Enzymes, Electrocardiograms, Myocardial Contractility and Reactive Hyperemia.** Marvin Richard Blumenthal, Hsueh-Hwa Wang and Letty Mei Pang Liu
- 234 **Alterations in Energy Metabolism and Ultrastructure Upon Reperfusion of the Ischemic Myocardium After Coronary Occlusion.** Gyan P. Sharma, Kenneth G. Varley, Sung W. Kim, Jaroslaw Barwinsky, Morley Cohen and Naranjan S. Dhalla
- 244 **Contractile and Biochemical Effects of Coronary Reperfusion After Extended Periods of Coronary Occlusion.** Pritpal S. Puri
- 252 **Maximal Revascularization (Reperfusion) in Intact Conscious Dogs After 2 to 5 Hours of Coronary Occlusion.** Virendra S. Mathur, Gene A. Guinn and Walter H. Burris, III

## CASE REPORTS

- 262 **Successful Partial Excision of an Intramural Fibroma of the Left Ventricle.** George J. Reul, Jr., Jimmy F. Howell, Pedro A. Rubio and Paul K. Peterson

## EDITORIALS

- 266 **Implanted Pacemakers: Medicolegal Implications.** Leonard S. Dreifus and David Cohen
- 268 **Permanent Pacing of the Heart: A Comment on Technique.** Victor Parsonnet

## SPECIAL DEPARTMENTS

- 269 **Letters to the Editor**  
Behavior Therapy for Type A Patients—Suinn et al.  
Relation Between S-T Segment Depression and S Wave Amplitude—Edwards and Katzeff  
Maximal Treadmill Testing—Bruyneel and Bruce
- 272 **Book Reviews**
- 274 **Reviews in Cardiology**
- 276 **American College of Cardiology News**

# CONTENTS: VOLUME 36

SEPTEMBER 1975

## CLINICAL STUDIES

- 281 **New Observations on the Effects of Atropine on the Sinuatrial and Atrioventricular Nodes in Man.** Gopal Das, Frederick N. Talmers and Arnold M. Weissler
- 286 **Induction of Atrioventricular Nodal Reentrant Tachycardia After Atropine. Report of Five Cases.** Masood Akhtar, Anthony N. Damato, William P. Batsford, Antonio R. Caracta, Jeremy N. Ruskin, Gerald M. Weissfogel and Sun H. Lau
- 292 **Quantitative Study of the Supernormal Phase of Ventricular Excitability in Man.** Masao Igarashi and Takao Ayabe
- 297 **Hereditary Progressive Atrioventricular Conduction Defect.** Henry T. Lynch, Syed Mohiuddin, Jane Moran, Arnold Kaplan, Michael Sketch, Alan Zencka and Vincent Runco
- 302 **Abnormalities of Left Ventricular Function and Geometry in Adults with an Atrial Septal Defect. Ventriculographic, Hemodynamic and Echocardiographic Studies.** Kenneth A. Popio, Richard Gorlin, Louis E. Teichholz, Peter F. Cohn, David Bechtel and Michael V. Herman
- 309 **Phasic Left Ventricular Blood Velocity Alternans in Man.** Kenneth B. Desser and Alberto Benchimol
- 315 **The Coronary Arteries in Marfan's Syndrome. A Morphologic Study.** Anton E. Becker and Jan-Paul van Miergen

## METHODS

- 322 **Clinical Applications of the Threshold Tracking Pacemaker.** Thomas A. Preston and David L. Bowers

## PEDIATRIC CARDIOLOGY

- 327 **Tricuspid Atresia: Clinical Course in 101 Patients.** Macdonald Dick, Donald C. Fyler and Alexander S. Nadas

## REPORTS ON THERAPY

- 338 **Surgical Experience in Patients with Marfan's Syndrome, Ascending Aortic Aneurysm and Aortic Regurgitation.** Antoine T. Nasrallah, Denton A. Cooley, Youssef Gousous, Grady L. Hallman, Roberto Lufschanowski and Robert D. Lischman
- 342 **Coronary Artery Bypass in Patients Over 70 Years of Age: Indications and Results.** Joseph Meyer, Don C. Wukasch, Walter Seybold-Epting, Luigi Chiarello, George J. Reul, Jr., Frank M. Sandiford, Grady L. Hallman and Denton A. Cooley

## DIAGNOSTIC SHELF

- 346 **Echocardiographic Findings of Ventricular Septal Rupture in Acute Myocardial Infarction.** Robert L. DeJoseph, Stuart F. Seides, Anton Lindner and Anthony N. Damato
- 349 **Echocardiographic Findings in Uhl's Anomaly. Demonstration of Diastolic Pulmonary Valve Opening.** James W. French, David Baum and Richard Popp

- 354 **Echocardiogram in Calcified Mitral Annulus.** David S. Hirschfeld and Blanka B. Emilion

## CASE REPORTS

- 357 **Reticulum-Cell Sarcoma with Intracardiac Metastases. Case with Angiocardiographic Improvement After Chemotherapy.** Cesar A. Conde, Jose Meller, John Pantazopoulos, Ephraim Donoso and Simon Dack
- 363 **Echocardiographic Diagnosis of Right Atrial Extension of Wilms' Tumor.** Zia Q. Farooki, James G. Henry and Edward W. Green

## SYMPOSIUM ON REPERFUSION DURING ACUTE MYOCARDIAL INFARCTION—PART II

- 368 **Revascularization After 3 Hours of Coronary Arterial Occlusion: Effects on Regional Cardiac Metabolic Function and Infarct Size.** Costantino Costantini, Elliot Corday, Tzu-Wang Lang, Samuel Meerbaum, John Brasch, Leo Kaplan, Steven Rubins, Herbert Gold and Jules Osher
- 385 **Consequences of Coronary Arterial Occlusion on Remote Myocardium: Effects of Occlusion and Reperfusion.** Elliot Corday, Leo Kaplan, Samuel Meerbaum, John Brasch, Costantino Costantini, Tzu-Wang Lang, Herbert Gold, Steven Rubins and Jules Osher
- 395 **Myocardial Revascularization After Acute Infarction.** Hooshang Bolooki with the assistance of Michael D. Kotler, Lawrence Lottenberg, Stephen Dresnick, Robert C. Andrews, Steven Kipnis and Richard M. Ellis

## EDITORIALS

- 407 **The Gastrointestinal Absorption of Organic Nitrates.** John C. Krantz, Jr. and Chauncey D. Leake

## SPECIAL DEPARTMENTS

- 409 **Letters to the Editor**  
Acute Suppurative Amebic Pericarditis—Ibarra-Pérez et al.  
Sequential Studies of Left Ventricular Function—Gensini et al.  
Life Expectancy and Marathon Running—Bassler and McIntosh  
Acupuncture Anesthesia for Open Heart Surgery—I—Cheng  
Acupuncture Anesthesia—II—Berman  
Cardiac Pacing in Acute Myocardial Infarction—Romero and Mizgala  
Blind Defibrillation—Wolfson  
Predictive Value of Enzyme Studies in Myocardial Infarction—Galen et al.  
Graft Patency and Serum Triglycerides—Silberman and Allard
- 414 **Book Reviews**
- 415 **Reviews in Cardiology**
- 417 **American College of Cardiology News**

OCTOBER 6, 1975

## CLINICAL STUDIES

- 419 Regional Left Ventricular Wall Dynamics Before and After Sublingual Administration of Nitroglycerin. Jean G. Dumesnil, Erik L. Riltman, George D. Davis, Gerald T. Gau, Barry D. Rutherford and Robert L. Frye
- 426 Effects of Nitroglycerin on the Major Determinants of Myocardial Oxygen Consumption. An Angiographic and Hemodynamic Assessment. Henry Greenberg, Edward M. Dwyer, Jr., A. Gregory Jameson and Bruce H. Pinkernell
- 433 Specificity of Elevated Serum MB Creatine Phosphokinase Activity in the Diagnosis of Acute Myocardial Infarction. Robert Roberts, K. S. Gowda, Philip A. Ludbrook and Burton E. Sobel
- 438 The Functional Defect in Amyloid Heart Disease. The "SIN Heart" Syndrome. Christopher Chew, Galal Mokhtar Ziad, Maurice J. Raphael and Cella M. Oakley
- 445 Sinus Nodal Responses to Atrial Extrastimuli in Patients Without Apparent Sinus Node Disease. Ramesh C. Dhirga, Christopher Wyndham, Fernando Amat-Y-Leon, Pablo Denes, Delon Wu and Kenneth M. Rosen

## EXPERIMENTAL STUDIES

- 453 Nitroglycerin in Experimental Myocardial Infarction. Effects on Regional Left Ventricular Length and Tension. Vidya S. Banks, Monty M. Bodenheimer and Richard H. Helfant
- 459 Dissociation of the Inotropic Effect of Digitalis from Its Effect on Atrioventricular Conduction. Young I. Kim, R. Joe Noble and Douglas P. Zipes

## METHODS

- 468 Improved Diagnosis in Coronary Cinearteriography with Routine Use of 110° Oblique Views and Cranial and Caudal Angulations. Comparison with Standard Transverse Oblique Views in 100 Patients. Harold E. Aldridge, Michael J. McLoughlin and Kenneth W. Taylor
- 474 Comparison of Observer Performance with 18 mm Cinefluorography and 70 mm Camera Fluorography in Coronary Arteriography. Lars Björk, Hugo Spindola-Franco, Francis X. Van Houten, Peter F. Cohn and Douglass F. Adams

## PEDIATRIC CARDIOLOGY

- 479 Survival After Systemic to Pulmonary Arterial Shunts in Infants Less Than 30 Days Old with Obstructive Lesions of the Right Heart Chambers. Kalim Uddin Aziz, Peter M. Olley, Richard D. Rowe, George A. Trusler and William T. Mustard
- 484 Results of Pulmonary Arterial Banding in Infancy. Survey of 5 Years' Experience in the New England Regional Infant Cardiac Program. Kenneth J. Dooley, Lucy Parisi-Buckley, Donald C. Fyler and Alexander S. Nadas

- 489 Considerations in the Surgical Management of Infantile Coarctation of Aorta. John P. Connors, Alexis F. Hartmann, Jr. and Clarence S. Weidon

- 493 Cardiac Catheterization in Small Infants: The Percutaneous Approach. John H. Gay

## REVIEWS

- 498 Ischemic Heart Disease: An Overview. Richard S. Ross

## HISTORICAL MILESTONES

- 508 Experiments on Heart Valves (1908) by Harvey Cushing and J. R. B. Branch. Saul Jarcho

## CASE REPORTS

- 509 Coronary Insufficiency in Children. Coronary Arteriographic Studies in Two Siblings from a Family with Hyperbetalipoproteinemia. David Bialostozky, Martin Luengo, Clementina Magos and Eduardo Zorrilla
- 515 Coronary Artery Disease in an 18 Year Old Girl with Pseudoxanthoma Elasticum: Successful Surgical Therapy. John M. Beto, John S. Banas, Jr., John Moran, Vivian Pinn and Herbert J. Levine
- 521 Multiple Ventricular Aneurysms. Babasola O. Okuwobi
- 524 Herniation of Mitral Leaflets in the Ehlers-Danlos Syndrome. Kenneth D. Brandt, Robert D. Sumner, Thomas J. Ryan and Alan S. Cohen

## EDITORIALS

- 529 Dynamic Ventriculography and the Role of the Ejection Fraction. Peter F. Cohn and Richard Gorlin

## SPECIAL DEPARTMENTS

- 532 Letters to the Editor  
Atrial Pacing During Angiography—I—Hall et al.  
Atrial Pacing During Angiography—II—Demany et al.  
The Fourth Heart Sound—A Normal Finding?—Abrams and Spodick  
Amiodarone Hydrochloride—Rosenbaum  
P-R Interval in Bifascicular Block—Lightfoot  
Predictive Value of Laboratory Tests—Galen  
J Point Depression in the Exercise Electrocardiogram—Silverstein and Kattus  
Early Hospital Discharge After Myocardial Infarction—DeSanctis et al.  
Methylprednisolone in Acute Myocardial Infarction—Feola and Vyden  
Polarizing Solutions—Sodi-Pollares et al.
- 541 Reviews in Cardiology
- 542 Book Reviews
- 544 American College of Cardiology News

# CONTENTS: VOLUME 36

OCTOBER 31, 1975

## I. SYMPOSIUM: RESPONSIBLE LEADERSHIP IN THE TRAINING OF THE CARDIOLOGISTS OF TOMORROW

- 547 Introduction. Henry D. McIntosh
- 550 Cardiology Manpower Resources and Their Distribution: A Challenge for the Future. Walter H. Abelmann
- 555 The Government's Concerns Regarding Postgraduate Training and Health Care Delivery. Theodore Cooper
- 558 Pending Federal Legislation and Postgraduate Training. Raymond D. Cotton
- 560 Cardiology in a System of Socialized Medicine: Canadian Experience. Maurice McGregor
- 563 The Responsible Role of a Chairman of the Department of Medicine in Postgraduate Training. Arnold Reisman
- 565 The Role of the American Board of Internal Medicine in Postgraduate Training. Saul Farber
- 567 The Objective of a Current Cardiology Training Program: Institution-Based. H. J. C. Swan
- 569 The Objective of a Current Cardiology Training Program: Community-Based. Richard W. Campbell
- 571 Discussion

## II. CARDIOVASCULAR PROBLEMS ASSOCIATED WITH AVIATION SAFETY: EIGHTH BETHESDA CONFERENCE OF THE AMERICAN COLLEGE OF CARDIOLOGY. APRIL 25 and 26, 1975, WASHINGTON, D.C.

- 573 Participants
- 575 Foreword: Introduction to the Conference. Leonard S. Dreifus
- 576 Aviation Cardiology in Canada. George W. Manning, Robert Thatcher and Ian H. Anderson
- 584 Operational Aspects of Pilot Incapacitation in a Multicrew Airliner. Captain Harry W. Oriady
- 589 Medical Excellence and Airline Pilots. Captain Roderic W. Gilstrap
- 592 On Experts and Expertise: The Effect of Variability in Observer Performance. David H. Spodick
- 597 Task Force I: Identification of Ischemic Heart Disease
- 608 Task Force II: Recommendations for Subjects with Ischemic Heart Disease

- 610 Task Force III: Recommendations for Postoperative Patients with Ischemic Heart Disease
- 611 Task Force IV: Cerebral Vascular Disease, Venous and Arterial Thrombosis
- 613 Task Force V: Hypertension
- 617 Task Force VI: Valvular Heart Disease
- 620 Task Force VII: Congenital Heart Disease
- 623 Task Force VIII: Myocardial-Pericardial Disease
- 624 Task Force IX: Arrhythmias

## III. REVIEW

- 629 Pharmacologic Therapy of Ventricular Arrhythmias. Roger A. Winkle, Stanton A. Glantz and Donald C. Harrison

## IV. SYMPOSIUM ON HYPERTENSION

- 651 Introduction and Overview. John H. Laragh
- 653 Antihypertensive Beta Blocking Action As Related to Renin and Age: A Pharmacologic Tool to Identify Pathogenetic Mechanisms in Essential Hypertension. Fritz R. Bühler, Felix Burkart, Benno E. Lütold, Markus Küng, German Marbet and Matthias Pfisterer
- 670 Hemodynamic Lesions in Hypertension. John M. Wallace
- 685 Autonomic Nervous Cardiovascular Regulation in Borderline Hypertension. Stevo Julius and Murray Esler
- 697 Systolic Hypertension: A Nonhomogenous Disease Entity. Panayiotis N. Adamopoulos, Steven G. Chrysanthakopoulos and Edward D. Frohlich
- 702 Hypertension with Renal Arterial Stenosis: Humoral, Hemodynamic and Histopathologic Factors. Franz H. Messerli, Jacques Genest, Wojciech Nowaczynski, Otto Kuchel, Paul Cartier, José M. Rojo-Ortega, Walter Schürch, Masanobu Honda and Roger Boucher
- 708 Relation of Renin Status to Neurogenic Vascular Resistance in Borderline Hypertension. Murray D. Esler, Stevo Julius, Otello S. Randall, Charles N. Ellis and Tomoyoshi Kashima
- 716 Inpatient Comparison of Treatment with Chlorthalidone, Spironolactone and Propranolol in Normoreninemic Essential Hypertension. Jan I. M. Drayer, Peter W. C. Kloppenborg, Jan Festen, Albert van 't Laar and Theo J. Benraad



### CLINICAL STUDIES

- 723 The "Angina-Producing" Myocardial Segment: An Approach to the Interpretation of Results of Coronary Bypass Surgery. Stephen C. Achuff, Lawrence S. C. Griffith, C. Richard Conti, J. O'Neal Humphries, Robert K. Brawley, Vincent L. Gott and Richard S. Ross
- 734 Effect of Direct Revascularization Surgery on Coronary Collateral Circulation in Man. Jackie R. See, Anthony M. Marlon, Harold L. Felkes and Richard S. Cosby
- 739 Saphenous Vein Bypass Grafts: Long-Term Patency and Effect on the Native Coronary Circulation. Samuel B. Itscoltz, David R. Redwood, Edward B. Stinson, Robert L. Reis and Stephen E. Epstein
- 744 Changes in Native Coronary Arteries After Coronary Bypass Surgery. Role of Graft Patency, Serum Lipids and Hypertension. M. Heikki Frick, Matti Valle, Pekka-Tapani Harjola and Ossi Korhola
- 751 Quantitative Study of Left Bundle Branch Fibrosis in Left Anterior Hemiblock: A Stereologic Approach. Jean-Claude Demoulin, Léon J. Simar and Henri E. Kulbertus
- 757 Alternating Wenckebach Periodicity: A Common Electrophysiologic Response. Fernando Amat y Leon, Ruben Chuquimia, Delon Wu, Pablo Denes, Ramesh C. Dhinra, Christopher Wyndham and Kenneth M. Rosen

### EXPERIMENTAL STUDIES

- 765 Biventricular Dynamics During Quantitated Anteroseptal Infarction in the Porcine Heart. Harold Brooks, Jafar Al-Sadir, Jeffrey Schwartz, Barry Rich, Paul Harper and Leon Resnekov with the technical assistance of Johanna Dellenbaugh
- 776 Vulnerability to Ventricular Fibrillation During Acute Coronary Arterial Occlusion and Release. Paul J. Axelrod, Richard L. Verrier and Bernard Lown

### METHODS

- 783 Measurement of Regional Myocardial Blood Flow in Man: Description and Critique of the Method Using <sup>133</sup>Xenon and a Scintillation Camera. Paul J. Cannon, Robert R. Sciaccia, Deborah L. Fowler, Melvin B. Weiss, Donald H. Schmidt and William J. Casarola

### PEDIATRIC CARDIOLOGY

- 793 Etiologic Relations Among Categories of Congenital Heart Malformations. F. Clarke Fraser and Alasdair D. W. Hunter

- 797 Echocardiographic Detection of Aneurysms of the Interventricular Septum Associated with Ventricular Septal Defect. A Method of Noninvasive Diagnosis and Follow-Up. David W. Sapire and Iain F. S. Black

### REPORT ON THERAPY

- 802 Cardiovascular Management of Pregnant Women with a Heart Valve Prosthesis. Pablo Casanegra, Guillermo Avlès, Gustavo Maturana and Juan Dubernet

### DIAGNOSTIC SHELF

- 807 Atrioventricular Block After Reciprocating Atrioventricular Junctional Tachycardia. Juan M. Aranda, Federico Moleiro, Agustin Castellanos and Benjamin Befeler
- 810 Sinus and Atrioventricular Nodal Reentrant Tachycardia in the Same Patient. Karlen L. Pauley, Jeremy N. Ruskin and Anthony N. Damato

### CASE REPORTS

- 817 Intrapericardial Bronchogenic Cysts. Mario N. Gomes and Charles A. Hufnagel
- 823 Heterografts as Aortocoronary Bypass Conduits in Human Beings. Bernadine H. Bulkley and William C. Roberts
- 829 Cardiac Manifestations of Fabry's Disease. Report of a Case with Mitral Insufficiency and Electrocardiographic Evidence of Myocardial Infarction. Anton E. Becker, Rein Schoorl, Anton G. Balk and R. M. van der Heide

### REPORT OF THE INTER-SOCIETY COMMISSION FOR HEART DISEASE RESOURCES

- 836 Optimal Resources for Cardiac Surgery. Guidelines for Program Planning and Evaluation. J. Gordon Scannell (Chairman), Grace E. Brown, Mortimer J. Buckley, Paul A. Ebert, Harold Laufman, Charles E. Rackley, David C. Sabiston, Jr. and Herbert E. Sloan

### EDITORIALS

- 849 Myocardial Revascularization: Current State of the Art. Donald Brian Effler
- 852 Saphenous Vein Grafts: Long-Term Patency and Secondary Changes in the Coronary Circulation. Ephraim Glassman

### SPECIAL DEPARTMENTS

- 854 Reviews in Cardiology
- 855 Book Reviews
- 856 American College of Cardiology News

# CONTENTS: VOLUME 36

DECEMBER 1975

## CLINICAL STUDIES

- 859 **Electrophysiologic Studies in the Denervated Transplanted Human Heart. II. Response to Norepinephrine, Isoproterenol and Propranolol.** David S. Cannom, Alan K. Rider, Edward B. Stinson and Donald C. Harrison
- 867 **Chronic Right Bundle Branch Block and Left Posterior Hemiblock. Clinical, Electrophysiologic and Prognostic Observations.** Ramesh C. Dhingra, Pablo Denes, Delon Wu, Ruben Chuquimia, Fernando Amat-y-Leon, Christopher Wyndham and Kenneth M. Rosen
- 873 **First Derivative of the Apex Cardiogram and Systolic Time Intervals in Evaluation of Myocardial Contractility in Man.** Jos L. Willems, Mary C. Kyle, Harold C. Pillsbury, III and Edward D. Freis
- 880 **Mahaim and James Fibers as a Basis for a Unique Variety of Ventricular Preexcitation.** Maurice Lev, Samuel M. Fox, III, Saroja Bharati, Joseph C. Greenfield, Jr., Kenneth M. Rosen and Alfred Pick
- 889 **Disappearance of Abnormal Q Waves After Aortocoronary Bypass Surgery.** Cesar A. Conde, Jose Meller, Jaime Espinoza, Ephraim Donoso and Simon Dack

## EXPERIMENTAL STUDIES

- 894 **Comparative Cardiac Dynamic Effects of Dobutamine and Isoproterenol in Conscious Instrumented Dogs.** Joseph E. Hinds and Edward W. Hawthorne
- 902 **Effects of Ischemia and Coronary Reperfusion on Myocardial Digoxin Uptake.** George A. Beller, Thomas W. Smith and William B. Hood

## PEDIATRIC CARDIOLOGY

- 908 **Echocardiographic Diagnosis of Tetralogy of Fallot.** Douglas C. Morris, Joel M. Feiner, Robert C. Schlant and Robert H. Franch
- 914 **Congenital and Surgical Atrioventricular Block Within the His Bundle.** Antoine T. Nasrallah, Paul C. Gillette and Charles E. Mullins
- 921 **Long-Term Follow-Up of Two Infants with an Implanted Cardiac Pacemaker.** Sylvia P. Griffiths, Constance J. Hayes, Frederick O. Bowman, Jr. and Welton M. Gersony

## METHODS

- 925 **Handy Heart Sound Simulator.** J. Nathaniel Sanderson

## REPORTS ON THERAPY

- 929 **Effects of Glucose-Insulin-Potassium on Myocardial Substrate Availability and Utilization in Stable Coronary Artery Disease. Studies on Myocardial Carbohydrates, Lipid and Oxygen Arterial-Coronary Sinus Differences in Patients with Coronary Artery Disease.** Alfred W. Stanley, Jr., Roger E. Moraski, Richard O. Russell, Jr., William J. Rogers, John A. Mantle, Robert A. Kreisberg, Huey G. McDaniel and Charles E. Rackley

## REVIEWS

- 938 **Metabolism of Free Fatty Acids, Glucose and Catecholamines in Acute Myocardial Infarction. Relation to Myocardial Ischemia and Infarct Size.** Lionel H. Opie

## HISTORICAL MILESTONES

- 954 **Carrel and Tuffier (1914) on Experimental Surgery of the Cardiac Orifices.** Saul Jarcho

## DIAGNOSTIC SHELF

- 957 **Echocardiographic Diagnosis of a Mobile, Pedunculated Tumor in the Left Ventricular Cavity.** Jorge A. Levisman, Rex N. MacAlpin, Abdul S. Abbasi, Nancy Ellis and Leslie M. Eber

## CASE REPORTS

- 960 **Constrictive Pericarditis in Procainamide-Induced Lupus Erythematosus Syndrome.** Shun K. Sunder and Anilkumar Shah
- 963 **Severe Alcoholic Cardiomyopathy Reversed with Abstinence from Alcohol.** Leonard Schwartz, Karen A. Sample and E. Douglas Wigle
- 967 **Holt-Oram Syndrome Associated with Combined Ostium Primum and Secundum Atrial Septal Defects: Successful Surgical Closure.** Hiroshi Mitsuoka, Sajid Chughtai, Renato Cutarelli, Rais A. Beg, Hossein Naraghypour and Earle B. Kay
- 969 **Unilateral Pulmonary Vein Atresia: Diagnosis and Treatment.** Antoine T. Nasrallah, Charles E. Mullins, Don Singer, Gunyon Harrison and Dan G. McNamara

## EDITORIALS

- 974 **Metabolic Changes in Myocardial Infarction.** Richard J. Bing
- 975 **Problems in Measurement of Serum Digoxin by Commercially Available Radioimmunoassay Kits.** Norman P. Kubasik, Bernard B. Brody and S. Serge Barold

## SPECIAL DEPARTMENTS

- 978 **Letters to the Editor**  
Dyskinesia of Left Ventricle is a Misnomer—Rao  
Concealed Ventricular Extrasystoles—Lightfoot and Levy  
Significance of Fourth Heart Sound and Split First Heart Sound—Rieckensky et al.  
Board Certification of Cardiologists—Oyer et al.
- 982 **Reviews in Cardiology**
- 983 **Book Reviews**
- 985 **American College of Cardiology News**
- 989 **Author Index**
- 991 **Subject Index**

# AUTHOR INDEX: VOLUME 36

- Abbasi AS, 957  
 Abelman WH, 550  
 Abildskov JA, 45  
 Abrams J, 534  
 Abreu WN, 409  
 Achuff SC, 723  
 Adamopoulos PN, 697  
 Adams DF, 474  
 Adams FH, 980  
 Adolph RJ, 979  
 Akhtar N, 202, 286  
 Akiyama T, 155  
 Aldridge HE, 468  
 Alexander JK, 193  
 Allard C, 413  
 Al-Sadir J, 765  
 Amat-y-Leon F, 91, 445, 757, 867  
 Anderson IH, 576  
 Anderson RP, 136  
 Andrews RC, 395  
 Aranda JM, 807  
 Aviles G, 802  
 Axelrod PJ, 776  
 Ayabe T, 292  
 Aziz KU, 479  
  
 Balk AG, 829  
 Banas JS Jr, 515  
 Banka VS, 453  
 Barold SS, 105, 975  
 Bartel AG, 174  
 Barwinsky J, 234  
 Bassler TJ, 410  
 Batsford WP, 286  
 Baum D, 349  
 Bechtel D, 302  
 Becker AE, 315, 829  
 Befeler B, 807  
 Beg RA, 967  
 Beller GA, 902  
 Benchimol A, 76, 309, 532, 533  
 Benraad TJ, 716  
 Berman R, 411  
 Bertolasi CA, 119  
 Bete JM, 142, 515  
 Bialostozky D, 509  
 Biddle TL, 155  
 Bigger JT, 98  
 Bing RJ, 974  
 Bissett JK, 218  
 Bharati S, 880  
 Björk L, 474  
 Black IFS, 797  
 Black MJ, 1  
 Blackburn H, 539  
 Bloch A, 538  
 Block PC, 142  
 Blount SG Jr, 11  
 Blumenthal MR, 225  
 Bodenheimer MM, 453  
 Bolooki H, 395  
  
 Bonchek LI, 136  
 Bon Tempo CP, 27  
 Boucher R, 702  
 Bowers DL, 322  
 Bowman FO Jr, 921  
 Brandt KD, 524  
 Brasch J, 368, 385  
 Brawley RK, 723  
 Brock L, 269  
 Brody BB, 975  
 Brooks H, 765  
 Brown GE, 836  
 Brown OR, 17  
 Bruce RA, 271  
 Bruyneel K, 271  
 Bryson AL, 532  
 Buckley MJ, 142, 836  
 Bühler FR, 653  
 Bulkley BH, 823  
 Burgess MJ, 45  
 Burggraf GW, 206  
 Burkart F, 653  
 Burris WH III, 252  
  
 Campbell RW, 569  
 Cannom DS, 859  
 Cannon PJ, 783  
 Caracta AR, 286  
 Carreño C, 119  
 Cartier P, 702  
 Casanegra P, 802  
 Casarella WJ, 783  
 Castellanos A, 807  
 Cavanilles JM, 148  
 Chang S, 21  
 Chatterjee K, 56  
 Chaudhry MH, 202  
 Cheng TO, 411  
 Chew C, 438  
 Chhablani RC, 91  
 Chiariello L, 342  
 Chonette D, 56  
 Chrysanthakopoulos SG, 697  
 Chughtai S, 967  
 Chuquimia R, 757, 867  
 Cohen AS, 524  
 Cohen D, 266  
 Cohen LS, 62  
 Cohen M, 234  
 Cohn JN, 202  
 Cohn PF, 302, 474, 529  
 Conde CA, 357, 889  
 Connors JP, 489  
 Conti CR, 723  
 Cooley DA, 338, 342  
 Cooper T, 555  
 Corday E, 211, 368, 385  
 Corya BC, 1  
 Cosby RS, 734  
 Costantini C, 368, 385  
 Cotton RD, 558  
 Courmel P, 105  
 Cutarelli R, 967  
  
 Dack S, 357, 889  
 Daggett WM, 142  
 da Luz PL, 148  
 Damato AN, 286, 346, 810  
 Das G, 281  
 Davis GD, 419  
 DeJoseph RL, 346  
 de Leon AC Jr, 27  
 Dellenbaugh J, 765  
 Demany MA, 533  
 DeMots H, 136  
 Demoulin J-C, 751  
 Denes P, 91, 445, 757, 867  
 DeSanctis RW, 538  
 deSoyza N, 218  
 Dessler KB, 76, 309, 532, 533  
 Dhalla NS, 234  
 Dhirga RC, 445, 757, 867  
 Dick M, 327  
 Dillon JC, 21  
 Doherty JE, 218  
 Donoso E, 357, 889  
 Dooley KJ, 484  
 Drayer JM, 716  
 Dreifus LS, 266, 575  
 Dresnick S, 395  
 Dubernet J, 802  
 DuBrow IW, 67  
 Dumesnil JG, 419  
 Dwyer EM Jr, 426  
  
 Eber LM, 957  
 Ebert PA, 836  
 Edie CA, 269  
 Edwards H, 270  
 Effler DB, 849  
 Ellis CN, 708  
 Ellis N, 957  
 Ellis RM, 395  
 Emilion BB, 354  
 Epstein SE, 739  
 Esker M, 685, 708  
 Espinoza J, 889  
 Esteves JP, 409  
  
 Fadali MA, 88  
 Farber S, 565  
 Farooki ZQ, 363  
 Feigenbaum H, 1, 21  
 Felkes HL, 734  
 Felner JM, 908  
 Feola M, 539  
 Festen J, 716  
 Filho AS, 409  
 Fisch C, 124, 856, 985  
 Fischer J, 37  
 Fisher EA, 67  
 Forrester JS, 56, 185  
 Fowler DL, 783  
 Fowler NO, 979  
 Fox SM III, 880  
 Franch RH, 908  
 Fraser FC, 793  
 Freis ED, 873  
  
 French JW, 349  
 Frick MH, 744  
 Friedberg HD, 163  
 Frohlich ED, 697  
 Frye RL, 419  
 Fyler DC, 327, 484  
 Gansch WH, 193  
 Galen RS, 412, 536  
 Gambino SR, 412  
 Ganz W, 56  
 Gau GT, 419  
 Gay JH, 493  
 Genest J, 702  
 Gensini GG, 409  
 Gersony WM, 921  
 Giardina E-GV, 98  
 Gillette PC, 914  
 Gilstrap RW, 589  
 Giantz SA, 629  
 Glassman E, 413, 852  
 Gold H, 368, 385  
 Goldner S, 185  
 Gomes MN, 817  
 Gorlin R, 302, 529  
 Gott VL, 723  
 Gould L, 540  
 Goussous Y, 338  
 Gowda KS, 433  
 Gray R, 56  
 Dwyer EM Jr, 426  
 Greenberg H, 426  
 Greenfield JC Jr, 880  
 Griffith LSC, 723  
 Griffiths SP, 921  
 Guimaraes AC, 409  
 Guinn GA, 252  
 Hackel DB, 174  
 Hall RR, 532  
 Hallman GL, 338, 342  
 Han J, 50  
 Harjola P-T, 744  
 Harper P, 765  
 Harrison DC, 629, 859  
 Harrison G, 969  
 Hartmann AF Jr, 489  
 Hastreiter AR, 67  
 Havari V, 979  
 Hawthorne EW, 894  
 Hayes CJ, 921  
 Heinle RA, 32  
 Helfant RH, 453  
 Henry JG, 363  
 Herman MV, 302  
 Hinds JE, 894  
 Hirschfeld DS, 354  
 Hodges M, 155  
 Honda M, 702  
 Hood WB, 902  
 Howell JF, 262  
 Hufnagel CA, 817  
 Humphries JO, 723  
 Hunter ADW, 793  
 Huston JH, 163

- Hutter AM Jr, 142, 538  
 Ibarra-Pérez C, 409  
 Igarashi M, 292  
 Itscoltz SB, 739  
 Jalón J, 119  
 Jameson AG, 426  
 Jarcho S, 506, 954  
 Jawny L, 980  
 Jeresaty RM, 110  
 Johnson WD, 163  
 Jolly WW, 37  
 Julius S, 685, 708  
 Kane JJ, 218  
 Kaplan A, 297  
 Kaplan L, 368, 385  
 Kashima T, 708  
 Kattus AA, 538  
 Katzeff IE, 270  
 Kawai N, 114  
 Kay EB, 967  
 Kim SW, 234  
 Kim Yi, 459  
 King JF, 163  
 King RM, 37  
 Kipnis S, 395  
 Kliks BR, 45  
 Kloppenborg PWC, 716  
 Kloster FE, 17  
 Knoebel SB, 1  
 Kong Y, 174  
 Korhola O, 744  
 Kotler MD, 395  
 Kotler MN, 114  
 Krantz JC Jr, 407  
 Kreisberg RA, 929  
 Kreulen TH, 88  
 Krug A, 214  
 Kubasik NP, 975  
 Kuchel O, 702  
 Kulbertus HE, 751  
 Kung M, 653  
 Kyle MC, 873  
 Lang T-W, 368, 385  
 Langou RA, 62  
 Laragh JH, 651  
 Lau SH, 286  
 Laufman H, 836  
 Leachman RD, 338  
 Leake CD, 407  
 Lekven J, 179  
 Lev M, 880  
 Levine HJ, 515  
 Levisman JA, 957  
 Levy MN, 978  
 Lightfoot PR, 536, 978  
 Lim JS, 131  
 Lindner A, 346  
 Linhart JW, 114  
 Liu LMP, 225  
 Loebel H, 56  
 Logan SE, 185  
 Lottenberg L, 395  
 Lown B, 776  
 Ludbrook PA, 433  
 Luengo M, 509  
 Lufschanowski R, 338  
 Lutold BE, 653  
 Lynch HT, 297  
 Lynch JD, 169  
 MacAlpin RN, 957  
 Magos C, 509  
 Manley JC, 163  
 Manning GW, 576  
 Mantle JA, 929  
 Marbet G, 653  
 Marlon AM, 734  
 Mathur VS, 252  
 Maturana G, 802  
 McNulty JH, 410  
 McDaniel HG, 929  
 McDonough MT, 88  
 McGregor M, 560  
 McIntosh HD, 411, 547  
 McLoughlin MJ, 468  
 McNamara DG, 969  
 Meierbaum S, 211, 368, 385  
 Meller J, 357, 889  
 Messerli FH, 702  
 Meyer J, 342  
 Michaels S, 148  
 Mikulic E, 202  
 Mintz GS, 114  
 Mitsuoka H, 967  
 Mizgala HF, 119, 412  
 Mohiuddin SM, 169, 297  
 Moleiro F, 807  
 Moothart RW, 11  
 Moran J, 297, 515  
 Moraski RE, 929  
 Morris DC, 908  
 Mugica J, 105  
 Mullins CE, 121, 914, 969  
 Mundth ED, 142  
 Murphy ML, 218  
 Mustard WT, 479  
 Nadas AS, 327, 484  
 Naraghypour H, 967  
 Nasrallah AT, 338, 914, 969  
 Nicoll A deB, 37  
 Noble RJ, 459  
 Nowaczynski W, 702  
 Oakley CM, 438  
 Okuwobi BC, 521  
 Olley PM, 479  
 Opie LH, 938  
 Orlady HW, 584  
 Osher J, 368, 385  
 Oyer CE, 980  
 Pantazopoulos J, 357  
 Paquet M, 121  
 Paris-Buckley L, 484  
 Parker JO, 206  
 Parmley WW, 185  
 Parsonnet V, 268  
 Paulay KL, 810  
 Peterson PK, 262  
 Pfisterer M, 653  
 Pick A, 880  
 Pillsbury HC, 873  
 Pinkernell BH, 426  
 Pinn V, 515  
 Popio KA, 302  
 Popp RL, 17, 349  
 Preston TA, 322  
 Proudfit WL, 131  
 Puri PS, 244  
 Quinones MA, 193  
 Rackley CE, 836, 926  
 Rahimtoola SH, 136, 10  
 Randall OS, 708  
 Rao G, 978  
 Raphael MJ, 438  
 Rasmussen S, 1  
 Reddy CVR, 540  
 Redwood DR, 739  
 Reeves TJ, 120  
 Reiffel JA, 98  
 Reis RL, 739  
 Reiman A, 563  
 Resnekov L, 765  
 Reul GJ Jr, 262, 342  
 Rich B, 765  
 Rider AK, 859  
 Rieckensky I, 979  
 Ritman EL, 419  
 Roberts R, 433  
 Roberts WC, 823  
 Rogers WJ, 929  
 Rojo-Ortega JM, 702  
 Romero CA, 412  
 Ronan JA Jr, 27  
 Rösch J, 136, 410  
 Rosen KM, 91, 413, 445, 757, 867, 880  
 Rosenbaum MB, 536  
 Rosenman RH, 269  
 Ross RS, 496, 723  
 Rowe RD, 479  
 Rubins S, 368, 385  
 Rubio PA, 262  
 Runco V, 169, 297  
 Ruskin JN, 286, 810  
 Russell RO Jr, 929  
 Rutherford BD, 419  
 Ryan TJ, 524  
 Sabiston DC Jr, 836  
 Salomon J, 32  
 Sample KA, 963  
 Sanderson JN, 925  
 Sandford FM, 342  
 Sands MJ, 88  
 Sapire DW, 797  
 Scannel JG, 836  
 Schlant RC, 908  
 Schmidt DH, 783  
 Schoorl R, 829  
 Schürch W, 702  
 Schwartz J, 765  
 Schwartz JN, 174  
 Schwartz L, 963  
 Sciaccia RR, 783  
 See JR, 734  
 Segal BL, 114  
 Seides SF, 346  
 Seybold-Epting W, 342  
 Shah A, 960  
 Shah PM, 32  
 Sharma GP, 234  
 Shubin H, 148  
 Shubrooks SJ Jr, 142  
 Silberman RE, 413  
 Silverstein HR, 538  
 Simar LJ, 751  
 Singer D, 969  
 Sketch MH, 169, 297  
 Sloan HE, 836  
 Smith TW, 902  
 Sobel BE, 433  
 Sodi-Pallares D, 540  
 Sones FM Jr, 131  
 Spangler RD, 11  
 Spann JF, 88  
 Spencer FC, 413  
 Spindola-Franco H, 474  
 Spodick DH, 535, 592  
 Stanley AW Jr, 929  
 Starr A, 136  
 Steele RJ, 206  
 Stinson EB, 739, 859  
 Straub KD, 218  
 Sulinn RM, 269  
 Sumner RD, 524  
 Sunder K, 960  
 Swan HJC, 56, 185, 567  
 Talmers FN, 281  
 Taylor KW, 468  
 Teichholz LE, 302  
 Thatcher R, 576  
 Thiel HG, 193  
 Toffler OB, 120  
 Trongé JE, 119  
 Trusler GA, 479  
 Tse WW, 50  
 Twigg HL, 27  
 Tyberg JV, 185  
 Valle M, 744  
 van der Heide RM, 829  
 Vangellow C, 155  
 Van Houten FX, 474  
 van Mantgem J-P, 315  
 van 't Laar A, 716  
 Varley KG, 234  
 Vega MR, 119  
 Verrier RL, 776  
 Vinhaes LSA, 409  
 Vyden JK, 539  
 Walisser E, 193  
 Wallace JM, 670  
 Wang H-H, 225  
 Weil MH, 148  
 Weisfogel GM, 286  
 Weiss MB, 783  
 Weissler AM, 281  
 Weldon CS, 489  
 Weyman AE, 21  
 Wigle ED, 963  
 Willems JL, 873  
 Winkle RA, 629  
 Wolfson IN, 412  
 Wolfson S, 62  
 Wong B, 62  
 Wu D, 91, 445, 757, 867  
 Wukasch DC, 342  
 Wyatt HL, 185  
 Wyndham C, 445, 757, 867  
 Zawrotny B, 155  
 Zeft HJ, 163  
 Zencka AE, 169, 297  
 Ziady GM, 438  
 Zimmerman HA, 533  
 Zipes DP, 37, 459  
 Zorrilla E, 509



# SUBJECT INDEX: VOLUME 36

- Acebutol for ventricular arrhythmias, 629
- Acetylstrophanthidin and left ventricular contractility and atrioventricular conduction, 459
- Acidosis, metabolic, and surgery for obstructive lesions of right heart chambers in infants less than 30 days old, 479
- Acupuncture anesthesia for open heart surgery, 411
- Adenosine triphosphate after extended coronary occlusion and reperfusion, 244
- Airline pilots, cardiovascular problems in (see Bethesda Conference on Cardiovascular Problems Associated with Aviation Safety)
- Alkalinity, myocardial, after coronary occlusion and reperfusion, 214
- American College of Cardiology and federal legislation on postgraduate training of cardiologists, 558
- American College of Cardiology News
  - Calendar of continuing medical education programs, 129, 276, 417, 544, 857, 988
  - Candidates certified by Subspecialty Board on Cardiovascular Disease, 278
  - Candidates certified by Subspecialty Board on Pediatric Cardiology, 987
  - College Governors for Atlantic Provinces and Wyoming, 544
  - New members, 277, 545, 986
  - Norms for use in the peer review of selected in-hospital cardiovascular diagnoses, 125
  - President's page
    - proposition: The American College of Cardiology speaks for the American cardiologist, 856
    - New Orleans 1976, 985
    - The College, education and the Heart House Learning Center, 124
- Amiodarone hydrochloride, availability of, 536
- Amyl nitrate and denervated transplanted human heart, 859
- Amyloid heart disease, functional defect in, 438
- Aneurysms
  - and measurement of regional myocardial blood flow with xenon-133 and scintillation camera, 783
  - coronary dissecting, in Marfan's syndrome, 315
  - multiple ventricular, in 17 year old Nigerian girl, 521
  - of interventricular septum in ventricular septal defect, echocardiogram in, 797
- Angina pectoris
  - and isosorbide dinitrate in coronary artery disease, 206
  - and mortality in left main coronary artery disease, 131
  - and pseudoxanthoma elasticum, bypass surgery for, 515
  - and results of coronary bypass surgery, 723
  - in left main coronary artery disease, 135
  - unstable, surgical versus medical therapy for, 119
  - variant, clinical and anatomic spectrum of, 142
- Angiography
  - (see also Arteriography)
  - after bypass surgery, 739, 744
  - after chemotherapy for reticulum-cell sarcoma, 357
  - and coronary collaterals after revascularization, 734
  - and echocardiography in ventricular volume measurement, 114
  - and multiple ventricular aneurysms in 17 year old Nigerian girl, 521
  - and myocardial oxygen consumption after nitroglycerin, 426
  - and postmortem studies in coronary artery disease, 174
  - and right ventricular volume determination, 67
  - atrial pacing during, 532
- Angiography
  - in amyloid heart disease, 438
  - in aortic root dissection and dilatation, 11
  - in Ehlers-Danlos syndrome, 524
  - in variant angina pectoris, 142
- Angiokeratoma corporis diffusum universale (Fabry's disease), cardiac manifestations of, 829
- Angiotension
  - and first derivative of apex cardiogram in evaluating myocardial contractility, 873
  - and ventricular diastolic compliance, 193
- Anticoagulant therapy in pregnant women with heart valve prosthesis, 802
- Aorta, coarctation of, surgery for, in infants, 489
- Aortic insufficiency, echocardiogram in, 11
- Aortic overriding in tetralogy of Fallot, 908
- Aortic regurgitation
  - and Marfan's syndrome, surgery for, 338
  - and pseudomalfuction of Beall mitral valve prosthesis, 88
- Aortic root
  - diameter of, in tetralogy of Fallot, 908
  - dissection of, echocardiogram in, 11, 17
- Aortic stenosis, vectorcardiogram in, 76
- Aortic valve in dextrotransposition of great arteries, 121
- Aortic valve disease, echocardiogram in, 17
- Aortic wall in aortic root dissection, 17
- Apex cardiogram, first derivative of, and systolic time intervals in evaluating myocardial contractility, 873
- Arrhythmias
  - after extended coronary occlusion and reperfusion, 252
  - and multiple ventricular aneurysms, 521
  - atrial, limitations of surface electrocardiogram in diagnosis of, 91
  - balloon-tipped flotation catheter for monitoring, 56
  - demand pacemaker, electrode fracture in, 105
  - digitalis-induced, manganese chloride and verapamil for, 50
  - in acute myocardial infarction after atropine, 281
  - in airline pilots, 624
  - in hereditary progressive atrioventricular conduction defect, 297
  - in right bundle branch block with left posterior hemiblock, 867
  - in tricuspid atresia, 327
  - sympathetic tone and, 45
  - timed vectorcardiogram in, 76
  - ventricular, pharmacologic therapy of, 629
- Arteriography, coronary
  - (see also Angiography)
  - and exercise testing, sex differences in correlation of, 169
  - and mortality in left main coronary artery disease, 131, 135
  - and pseudoxanthoma elasticum, 515
  - in family with hyperbetalipoproteinemia, 509
  - observer performance in
    - with 16 mm cinefluorography and 70 mm camera fluorography, 474
    - with Cardioskop-U, 468
  - with use of 110° oblique views and cranial and caudal angulations, 468
- Ascending aortic aneurysm and Marfan's syndrome, surgery for, 338
- Astra W36095 for ventricular arrhythmias, 629
- Atherosclerosis, coronary
  - and familial hyperbetalipoproteinemia, 509
  - in ischemic heart disease, 496

- Atrial hypertrophy, vectorcardiogram in, 76
- Atrial rhythms, dissimilar, electrophysiologic studies in, 91
- Atrial septal defects
- left ventricle in, 302
  - ostium primum and secundum, with Holt-Oram syndrome, surgery for, 967
  - right ventricular volume in, 67
- Atrioventricular block
- after atrioventricular junctional tachycardia, 807
  - and alternating Wenckebach periodicity, 757
  - within His bundle in congenital heart disease, 914
- Atrioventricular nodal artery in Marfan's syndrome, 315
- Atrioventricular node
- atropine and, 281
  - in transplanted human heart, 859
- Atrium, right, Wilms' tumor in, 363
- Atropine
- and alternating Wenckebach periodicity, 757
  - and denervated transplanted human heart, 859
  - and sinoatrial and atrioventricular nodes, 281
  - and sinus nodal recovery time in sick sinus syndrome, 98
  - atrioventricular nodal reentrant tachycardia after, 286
  - and neurogenic vascular resistance in borderline hypertension, 708
- Auscultation in idiopathic mitral valve prolapse, 32
- Autonomic nervous system
- and digitalis effect on atrioventricular conduction, 459
  - in borderline hypertension, 685
- Aviation cardiology in Canada, 576
- Aviation safety, cardiovascular problems associated with (see Bethesda Conference on Cardiovascular Problems Associated with Aviation Safety)
- A wave in infundibular and valvular stenosis, 21
- Bacterial endocarditis
- in Ehlers-Danlos syndrome, 524
  - in tricuspid atresia, 327
- Behavior therapy for type A cardiac patients, 269
- Beta adrenergic blockade
- and ventricular dimensions during experimental coronary occlusion, 179
  - in denervated transplanted human heart, 859
- Bethesda Conference: Cardiovascular Problems Associated with Aviation Safety, 573-626
- Aviation cardiology in Canada, 576
  - Foreword, introduction to the conference, 575
  - Medical excellence and airline pilots, 589
  - On experts and expertise: the effect of variability in observer performance, 592
  - Operational aspects of pilot incapacitation in a multicrew airliner, 584
  - Participants, 573
  - Task force I: identification of ischemic heart disease, 597
  - Task force II: recommendations for subjects with ischemic heart disease, 608
  - Task force III: recommendations for postoperative patients with ischemic heart disease, 610
  - Task force IV: cerebral vascular disease, venous and arterial thrombosis, 611
  - Task force V: hypertension, 613
  - Task force VI: valvular heart disease, 617
  - Task force VII: congenital heart disease, 620
  - Task force VIII: myocardial-pericardial disease, 623
  - Task force IX: arrhythmias, 624
- Blood flow
- after coronary bypass surgery, 723
- Blood flow
- coronary
    - after sublingual nitroglycerin, 419, 426
    - during reperfusion, 252
    - myocardial, after experimental coronary occlusion, 179
    - measured with xenon-133 and scintillation camera, 783
    - velocity alternans, phasic left ventricular, 309
- Blood gases, arterial, and surgery for coarctation of aorta in infants, 489
- Blood pressure
- after nitroglycerin in experimental myocardial infarction, 453
  - aortic diastolic, in coronary arterial stenosis, 185
  - gradient, intraventricular, in idiopathic hypertrophic subaortic stenosis, 62
- Blood volume in hypertension, 670
- Book Reviews
- Advances in Cardiology: The Myocardium (Reader, ed), 273
  - Cardiogenic Shock, Mechanism and Management (Kones), 542
  - Care of the Critically III, second edition (Ayres, Giannelli and Mueller), 272
  - Clinical Cardiac Radiology (Jefferson and Rees), 123
  - Coronary Heart Disease (Kaltenbach, Lichten, Friesinger, ed), 983
  - The Heart (Edwards, Lev and Abell, ed), 543
  - The Mammalian Myocardium (Langer and Brady, ed), 414
  - Mechanisms of Hypertension (Sambhi, ed), 273
  - Micro-Angiography of the Lung in Infancy and Childhood (Robertson), 272
  - The Normal Apexcardiogram (Willems), 414
  - Pathology Annual (Sommers, ed), 984
  - A Practice of Cardiac Catheterization (Mendel), 855
  - Progress in Cardiology (Yu and Goodwin, ed), 542
  - Sick Sinus Syndrome (Ferrer), 983
  - 7th European Conference on Microcirculation. Part I: Methodology on Microcirculation (Ditzel and Lewis, ed), 273
  - Treatment of Cardiac Emergencies (Goldberger), 543
  - Vascular Disorders of the Extremities, second edition (Abramson), 543
- Bradyarrhythmias and supernormal ventricular excitability, 292
- Bradycardia after atropine in myocardial infarction, 281
- Bradycardia-tachycardia syndrome, atropine in, 98
- Branch, J. R. B., experiments on heart valves by, 506
- Bundle branch block, right, and left posterior hemiblock, electrophysiologic studies in, 867
- Bundle branch fibrosis, left, in left anterior hemiblock, 751
- Calcium current, inward, and manganese chloride and verapamil, 50
- Canada, cardiology in, 560
- Carbohydrate, myocardial, and glucose-insulin-potassium, 929
- Cardiac catheterization
- and MB creatine phosphokinase, 433
  - in small infants, percutaneous approach in, 493
  - retrograde left atrial, in idiopathic hypertrophic subaortic stenosis, 62
- Cardiac output
- in acute myocardial infarction and shock, 148
  - in essential hypertension, 670
  - in systolic hypertension, 697
- Cardiologists, board certification of, 980
- Cardiomyopathy
- and amyloid heart disease, 438
  - and dobutamine in severe congestive heart failure, 202
  - and multiple ventricular aneurysms, 521
  - and ventricular diastolic compliance, 193
  - in airline pilots, 623
  - nonischemic, in mitral valve prolapse-click syndrome, 110

- Cardiovascular diagnoses, selected in-hospital, norms for use in peer review of, 125
- Cardioversion, electrical, critical amount of myocardium in, 37
- Cardoskop-U in coronary arteriography, 468
- Carrel and Tuffier on experimental surgery of the cardiac orifices, 954
- Catecholamines, myocardial metabolism of, in acute myocardial infarction, 938
- plasma and urine levels in hypertension, 686
- Catheter, balloon-tipped flotation, for cardiac monitoring, 56
- Central nervous system disease, arrhythmias and, 45
- Cerebral vascular disease in airline pilots, 611
- Chemotherapy and reticulum-cell sarcoma with intracardiac metastases, 357
- Chest roentgenogram in idiopathic mitral valve prolapse, 32
- Chlorthalidone in normoreninemic essential hypertension, 716
- Cinearteriography (see Arteriography)
- Click, systolic, and late systolic murmur, and chest roentgenogram, 27
- Cineangiography (see Angiography)
- Cinefluorography, 16 mm, versus 70 mm camera fluorography in coronary arteriography, 474
- Compartmental models and pharmacologic therapy of ventricular arrhythmias, 629
- Conduction
- atrioventricular
    - after atropine, 281, 286
    - concealed, and alternating Wenckebach periodicity, 757
    - digitalis in, 459
    - hereditary progressive defect of, 297
    - in amyloid heart disease, 438
    - sinoatrial
      - after atropine, 281
      - in sick sinus syndrome, 96
      - normal, 445
- Conduction disease
- in left anterior hemiblock, 751
  - in right bundle branch block with left posterior hemiblock, 867
- Conduction disturbances
- and mortality in left main coronary artery disease, 131
  - in airline pilots, 624
  - intraatrial block, electrophysiologic studies in, 91
  - intraventricular, and normal sinoatrial conduction, 445
- Congenital defects and heart in Fabry's disease, 829
- Congenital heart defects, etiologic relations among, 793
- Congenital heart disease
- atrial septal defect, ventricular function in, 302
  - echocardiography in Uhl's anomaly, 349
  - heart block in infants, cardiac pacemaker for, 921
  - hereditary progressive atrioventricular conduction defect, 297
  - in airline pilots, 620
  - percutaneous sheath cardiac catheterization in, 493
  - right ventricular volume in, 67
  - surgery for Marfan's syndrome, 338
  - tetralogy of Fallot, echocardiography in, 908
- Connective tissue defect
- in Marfan's syndrome, surgery for, 338
  - mitral valve in, 524
- Contractility
- myocardial
    - after coronary occlusion and reperfusion, 225, 244
    - and dobutamine versus isoproterenol, 894
  - ventricular
    - after extended coronary occlusion and reperfusion, 252
    - after nitroglycerin in experimental myocardial infarction, 453
    - after sublingual nitroglycerin, 419, 426
    - and mortality in left main coronary artery disease, 131
- Contractility
- ventricular
    - and multiple ventricular aneurysms, 521
    - digitalis and, 459
    - in anteroapical infarction, 765
- Coronary arteries
- after bypass surgery, 739, 744
  - collateral vessels
    - after coronary bypass surgery, 734
    - and 16 mm cinefluorography and 70 mm camera fluorography, 474
- Coronary artery disease
- (see also Coronary occlusion; Myocardial revascularization; Surgery, coronary bypass)
  - and behavioral therapy, 269
  - and graded reductions in regional coronary perfusion, 185
  - and measurement of regional myocardial blood flow, 783
  - and mitral valve prolapse-click syndrome, 110
  - and patency of bypass grafts, 739
  - and Q wave disappearance after coronary bypass surgery, 889
  - and 16 mm cinefluorography and 70 mm camera fluorography, 474
  - and ventricular wall dynamics after nitroglycerin, 419
  - angiographic and postmortem findings in, 174
  - glucose-insulin-potassium in, 929
  - in variant angina pectoris, 142
  - isosorbide dinitrate in, 206
  - left main
    - long-term follow-up of 141 nonsurgical cases, 131
    - prognosis in, 131, 135
  - life units in evaluating therapy for, 120
  - underestimated by angiography, 174
  - vectorcardiogram in, 76
- Coronary care unit, echocardiogram in, 1
- Coronary heart disease (see Coronary artery disease)
- Coronary occlusion
- (see also Symposium on Reperfusion During Acute Myocardial Infarction)
  - and reperfusion
    - myocardial digoxin uptake during, 902
    - regional cardiac metabolic function and infarct size during, 368
    - ventricular fibrillation threshold in, 776
  - experimental
    - practolol and left ventricular dimensions during, 179
    - sympathetic tone and ventricular fibrillation threshold during, 45
  - extended, coronary reperfusion after, 244
  - for 2 to 5 hours, maximal revascularization after, 252
  - serum enzymes after, 225
- Coronary perfusion, graded reductions in, and cardiac function, 185
- Coronary reperfusion
- (see also Symposium on Reperfusion During Acute Myocardial Infarction)
  - after 2 to 5 hours of coronary occlusion, 252
  - serum enzymes after, 225
- Coronary spasm and variant angina pectoris, 142
- Coumarin and pregnant women with mitral valve prosthesis, 802
- Creatine phosphate after extended coronary occlusion and reperfusion, 244
- Creatine phosphokinase, MB isoenzyme, in acute myocardial infarction, 433
- Cushing, Harvey, experiments on heart valves by, 506
- "Cystic medial necrosis" of coronary arteries in Marfan's syndrome, 315
- Cysts, intrapericardial bronchogenic, 817
- Defibrillation, blind, 412



- Digitalis
  - and atrioventricular nodal reentry, 286
  - inotropic effect of, versus effect on atrioventricular conduction, 459
  - toxicity, and manganese chloride and verapamil, 50
- Digoxin
  - serum, measured by commercial radioimmunoassay kits, 975
  - tritiated, after coronary reperfusion, 218
- Diphenylhydantoin for ventricular arrhythmias, 629
- Dobutamine
  - in severe congestive heart failure, 202
  - versus isoproterenol in conscious instrumented dogs, 394
- (dp/dt)/P of apex cardiogram in evaluating myocardial contractility, 873
- Dyskinesia after coronary occlusion and reperfusion, 395
  
- Ebstein's disease of tricuspid valve and Uhl's anomaly, echocardiogram in, 349
- Echocardiogram
  - and aneurysms of interventricular septum in ventricular septal defect, 797
  - and infundibular versus pulmonary valve stenosis, 21
  - and left ventricular volume measurement, 114
  - and tumor in left ventricular cavity, 957
  - in acute myocardial infarction, 1
  - in amyloid heart disease, 438
  - in aortic root dissection, 11, 17
  - in aortic valve disease, 17
  - in atrial septal defect, 302
  - in calcified mitral annulus, 354
  - in dextrotransposition of great vessels, 121
  - in diagnosis of right atrial extension of Wilms' tumor, 363
  - in Ebstein's disease of tricuspid valve, 349
  - in Ehlers-Danlos syndrome, 524
  - in Uhl's anomaly, 349
  - in ventricular septal defect, 346
- Ehlers-Danlos syndrome, herniation of mitral leaflets in, 524
- Ejection fraction
  - and dynamic ventriculography, 529
  - and right ventricular volume in congenital heart disease, 67
- echocardiography and, 114
- Electrocardiogram
  - after bypass surgery, 163, 723, 744, 889
  - after coronary occlusion and reperfusion, 225, 395
  - and atrioventricular block within the His bundle, 914
  - exercise
    - J point depression in, 538
    - S wave in, 270
  - in alternating Wenckebach periodicity, 757
  - in demand pacemaker arrhythmias, 105
  - in Fabry's disease, 829
  - in left main coronary artery disease, 135
  - in tricuspid atresia, 327
  - in variant angina pectoris, 142
  - in ventricular preexcitation, 880
  - limitations of, in atrial arrhythmias, 91
  - versus vectorcardiogram, 76
- Electrode fracture in demand pacemaker arrhythmias, 105
- Electrogram
  - atrial, and balloon-tipped flotation electrode catheter, 56
  - ventricular, and demand pacemaker arrhythmias, 105
- Electrophysiologic studies
  - in atrioventricular block after reciprocating atrioventricular junctional tachycardia, 807
  - in chronic right bundle branch block and left posterior hemiblock, 867
- Electrophysiologic studies
  - in demand pacemaker arrhythmias, 105
  - in denervated transplanted human heart, 859
  - in dissimilar atrial rhythms, 91
  - in sick sinus syndrome, 98
  - of alternating Wenckebach periodicity, 757
  - of atrioventricular block within the His bundle, 914
  - of atropine and sinoatrial and atrioventricular nodes, 281
  - of bifascicular block, 536
  - of normal sinoatrial conduction, 445
  - of sinus and atrioventricular nodal reentrant tachycardia in same patient, 810
- Epinephrine in dynamic ventriculography, 529
- Estrogen and false positive exercise tests in women, 169
- Exercise and S wave changes, 270
- Exercise electrocardiogram, J point depression in, 538
- Exercise testing
  - maximal treadmill versus isometric, 271
  - predictive value of, 536
  - sex differences in, 169
- Experts and expertise in cardiology, 592
- Extrasystoles, concealed ventricular, 978
- and pacemaker arrhythmia, 105
- Extrastimuli, atrial, normal sinus nodal responses to, 445
  
- Fabry's disease, cardiac manifestations of, 829
- Fibrosis of left bundle branch in left anterior hemiblock, 751
- Familial disease
  - hereditary progressive atrioventricular conduction defect, 297
  - hyperbetalipoproteinemia, coronary insufficiency in children from a family with, 509
- Fibroma, intramural left ventricular, partial excision of, 262
- Fluorography, 70 mm camera, versus 16 mm cinefluorography in coronary arteriography, 474
- Frank lead system in clinical vectorcardiography, 76
- Frank vector system and measurement of S-T segment elevation in acute myocardial infarction, 155
- Free fatty acids, myocardial metabolism of, in acute myocardial infarction, 938
  
- Geriatric cardiology and coronary artery bypass in patients over 70 years of age, 342
- Glucose, myocardial metabolism of, in acute myocardial infarction, 938
- Glucose-insulin-potassium
  - and cardiac metabolism, 540
  - in acute myocardial infarction, 938
  - in coronary artery disease, 929
- Government and postgraduate training of cardiologists, 555, 558
- Graft patency and serum triglycerides, 413
  
- Health care delivery, government and, 555, 558
- Heart, transplanted denervated, electrophysiologic studies in, 859
- Heart block
  - advanced, in right bundle branch block with left posterior hemiblock, 873
  - converted to normal atrioventricular conduction, 297
- Heart disease
  - amyloid, functional defect in, 438
  - ischemic
    - in airline pilots, 597, 608, 610
    - natural history of, 496
    - versus amyloidosis, 438
  - valvular, in airline pilots, 617



- Heart failure, congestive
  - and left main coronary artery disease, 131
  - and multiple ventricular aneurysms, 521
  - and surgery for coarctation of aorta in infants, 489
  - in tricuspid atresia, 327
  - optimal dose of digitals in, 459
  - severe, dobutamine in, 202
- Heart rate and myocardial contractility with dobutamine versus isoproterenol, 894
- Heart sound
  - fourth
    - audibility and recordability, 532
    - significance of, and split first heart sound, 979
  - simulator, handy, 925
- Heart weight and ventricular defibrillation, 37
- Hemiblock
  - left anterior, quantitative study of left bundle branch fibrosis in, 751
  - left posterior, and right bundle branch block, electrophysiologic studies in, 867
- Hemodynamics
  - after bypass surgery, 723
  - after extended coronary occlusion and reperfusion, 252
  - after nitroglycerin in experimental myocardial infarction, 453
  - after practolol during experimental coronary occlusion, 179
  - and balloon-tipped flotation catheter for monitoring, 56
  - and echocardiogram in Uhl's anomaly, 349
  - and myocardial oxygen consumption after nitroglycerin, 426
  - in acute myocardial infarction and shock, 148
  - in anteroseptal infarction, 765
  - in borderline hypertension, 685
  - in congenital heart disease, 67
  - in essential hypertension, 670
  - in hypertension with renal arterial stenosis, 702
  - in infundibular and valvular stenosis, 21
  - in mitral valve prolapse-click syndrome, 110
  - in systolic hypertension, 697
  - in tricuspid atresia, 327
  - of dobutamine
    - in severe congestive heart failure, 202
    - versus isoproterenol, 894
  - of isosorbide dinitrate in coronary artery disease, 206
- Hemoglobin-oxygen affinity in acute myocardial infarction and shock, 148
- Hemopericardium, echocardiogram in, 11
- Heterografts, sheep carotid arterial, as aortocoronary bypass conduit, 823
- His bundle, congenital and surgical atrioventricular block within, 914
- Holt-Oram syndrome with ostium primum and secundum atrial septal defects, surgery for, 967
- Hydrogen ion concentration after temporary coronary occlusion, 214
- Hyperbetalipoproteinemia, familial type II, and coronary insufficiency, 509
- Hyperemia, reactive, after coronary occlusion and reperfusion, 225
- Hypertension
  - (see also Symposium on Hypertension)
  - and coronary arteries after bypass surgery, 744
  - borderline
    - autonomic nervous cardiovascular regulation in, 685
    - renin status and neurogenic vascular resistance in, 708
  - essential
    - and antihypertensive beta blocking action as related to renin and age, 653
    - hemodynamics in, 670
    - normoreninemic, chlorthalidone, spironolactone and propranolol in, 716
  - in airline pilots, 613
- Hypertension
  - systolic, nonhomogeneous diseases, 697
  - with renal arterial stenosis, 702
- ICHID report on cardiac surgery, 836
- Idiopathic hypertrophic subaortic stenosis
  - and ventricular diastolic compliance, 193
  - in airline pilots, 623
  - retrograde catheterization of left atrium in, 62
  - vectorcardiogram in, 76
- Interventricular septum, aneurysms of, in ventricular septal defect, 797
- Intrapericardial bronchogenic cysts, 617
- Intraventricular block, focal, and electrocardiogram in coronary artery disease, 163
- Isoproterenol
  - and denervated transplanted human heart, 859
  - and first derivative of apex cardiogram in evaluating myocardial contractility, 873
- Isosorbide dinitrate
  - gastrointestinal absorption of, 407
  - in coronary artery disease, 206
- James and Mahaim fibers in unique variety of ventricular preexcitation, 880
- J point depression in exercise electrocardiogram, 538
- Jogging and life expectancy, 410
- Laboratory tests, predictive value of, 536
- Lactate metabolism and isosorbide dinitrate in coronary artery disease, 206
- Legislation, federal, and postgraduate training of cardiologists, 558
- Lidocaine for ventricular arrhythmias, 629
- Life units in evaluating therapy for coronary artery disease, 120
- Lipids, myocardial, and glucose-insulin-potassium, 929
- Lown-Ganong-Levine syndrome and ventricular preexcitation, 880
- Lupus erythematosus, procainamide-induced, constrictive pericarditis in, 960
- Magnet, testing, and diagnosis of pacemaker electrode fracture, 105
- Mahaim and James fibers in unique variety of ventricular preexcitation, 880
- Manganese chloride and automaticity of digitalized Purkinje fibers, 50
- Manpower in cardiology
  - (see Symposium on Responsible Leadership in the Training of the Cardiologists of Tomorrow)
  - board certification of cardiologists, 980
  - cardiologic resources, 550
- Marathon running and life expectancy, 410
- Marfan's syndrome
  - and Ehlers-Danlos syndrome, mitral valve in, 524
  - and idiopathic mitral valve prolapse, 32
  - and mitral valve prolapse-click syndrome, 110
  - and systolic click-late systolic murmur syndrome, 27
  - coronary arteries in, 315
  - surgery for, 338
- Medical versus surgical treatment in variant angina pectoris, 142
- Medicolegal considerations of implanted pacemakers, 266
- Methylprednisolone in acute myocardial infarction, 539
- Mitochondrial function after coronary reperfusion, 218
- Mitral annulus, calcification of, echocardiogram in, 354

- Mitral insufficiency in Fabry's disease, 829
- Mitral valve  
closure, and prognosis in acute myocardial infarction, 1  
in systolic click-late systolic murmur syndrome, 27  
leaflets  
  anterior, in aortic regurgitation, 11  
  herniation of, in Ehlers-Danlos syndrome, 524  
myxomatous degeneration of, and mitral valve prolapse, 110  
prolapse, idiopathic, thoracic skeletal abnormalities in, 27, 32  
prolapse-click syndrome, etiology of, 110  
prostheses, Beall, pseudomalignancy of, and paravalvular aortic regurgitation, 88
- Mortality in left main coronary artery disease, 131, 135
- Murmur, late systolic, and systolic click, and chest roentgenogram, 27
- Muscle cell damage  
after coronary reperfusion, 234  
irreversible, and hydrogen ion concentration after temporary coronary occlusion, 214
- Muscle fiber stretch and left ventricular diastolic compliance, 193
- Myocardial disease in airline pilots, 623
- Myocardial function  
after coronary reperfusion, 234  
regional, and graded reductions in regional coronary perfusion, 185
- Myocardial glycogen depletion after extended coronary occlusion and reperfusion, 385
- Myocardial infarction  
(see also Symposium on Reperfusion During Acute Myocardial Infarction)  
acute  
  and coronary bypass in patients over 70 years of age, 342  
  and echocardiogram in ventricular septal rupture in, 346  
  and elevated serum MB creatine phosphokinase activity, 433  
  and measurement of regional myocardial blood flow with xenon-133 and scintillation camera, 783  
  cardiac pacing in, 412  
  early hospital discharge after, 538  
  echocardiogram in, 1  
  metabolic changes in, 974  
  metabolism of free fatty acids, glucose and catecholamines in, 938  
  methylprednisolone in, 539  
  predictive value of enzyme studies in, 412  
  revascularization after, 395  
  symposium on reperfusion during, 211-261; 368-408  
  S-T segment elevation in, 155  
  systemic oxygen delivery after, 148  
and alleviation of angina after bypass surgery, 723  
experimental  
  anteroseptal, in porcine heart, biventricular dynamics during, 765  
  nitroglycerin in, 453  
in Fabry's disease, 829  
production of, and relief of symptoms in ischemic heart disease, 496  
vectorcardiogram in, 76
- Myocardial infarcts  
focal, after extended coronary occlusion and reperfusion, 385  
size of  
  after coronary occlusion and reperfusion, 234, 368, 395  
  and myocardial metabolism of free fatty acids, glucose and catecholamines, 938
- Myocardial ischemia  
and metabolism of free fatty acids, glucose and catecholamines, 938
- Myocardial ischemia  
and myocardial uptake of tritiated digoxin in subendocardial and subepicardial regions, 902  
and practolol, during experimental coronary occlusion, 179  
and reversible electrical patterns of infarction, 163  
border zone after nitroglycerin in experimental myocardial infarction, 453  
subendocardial versus epicardial segment function in, 185
- Myocardial metabolism  
after coronary reperfusion, 218, 234  
after extended coronary occlusion and reperfusion, 252, 368  
after practolol in experimental coronary occlusion, 179  
and glucose-insulin-potassium, 929  
anoxic, in acute myocardial infarction and shock, 148  
in acute myocardial infarction, 974  
of free fatty acids, glucose and catecholamines in acute myocardial infarction, 938  
remote, after extended coronary occlusion and reperfusion, 385
- Myocardial oxygen consumption  
after sublingual nitroglycerin, 419, 426  
and glucose-insulin-potassium, 929  
and isosorbide dinitrate in coronary artery disease, 206
- Myocardial revascularization  
(see also Coronary reperfusion; Surgery, coronary bypass; Symposium on Reperfusion During Acute Myocardial Infarction)  
coronary collaterals after, 734  
current state of, 849
- Myocardial theory in mitral valve prolapse-click syndrome, 110
- Myocardial ultrastructure after coronary reperfusion, 234
- Myocardium  
remote, after coronary occlusion and reperfusion, 385  
right ventricular, echocardiogram in hypoplasia of, 349
- Myxoma of mitral valve and mitral valve prolapse-click syndrome, 110
- New England Regional Infant Cardiac Program, pulmonary arterial banding in, 484
- Nitrates, organic, gastrointestinal absorption of, 407
- Nitroglycerin  
and major determinants of myocardial oxygen consumption, 426  
in experimental myocardial infarction, 453  
sublingual, regional left ventricular wall dynamics before and after, 419  
sustained release, gastrointestinal absorption of, 407
- Norepinephrine and denervated transplanted human heart, 859
- Norms for use in peer review of selected in-hospital diagnoses, 125
- Observer performance, variations in, 592
- Quabain and automaticity of Purkinje fibers, 50
- Oxygen administration and regional blood flow in myocardial infarction, 185
- Oxygen delivery in acute myocardial infarction and shock, 148
- Oxygen extraction after coronary reperfusion, 218
- Pacemakers  
analysis of, vectorcardiogram in, 76  
and atrioventricular block within the His bundle, 914  
electrode dislodgment in transvenous and transthoracic pacing, 268  
implanted, medicolegal considerations, 266  
in airline pilots, 624  
in right bundle branch block with left posterior hemiblock, 867  
long-term follow-up of two infants with, 921  
threshold tracking, 322

- Pacing
  - and balloon-tipped flotation electrode catheter, 56
  - atrial
    - and isosorbide dinitrate in coronary artery disease, 206
    - and normal sinoatrial conduction, 445
    - during angiography, 532
  - in acute myocardial infarction, 412
  - permanent, transvenous versus transthoracic, 268
- Pectus excavatum
  - in idiopathic mitral valve prolapse, 32
  - in systolic click-late systolic murmur syndrome, 27
- Pediatric cardiology
  - (see also Congenital heart disease)
  - coronary bypass surgery for coronary artery disease and pseudoxanthoma elasticum in 18 year old girl, 515
  - coronary insufficiency in children, 509
  - echocardiogram
    - in dextrotransposition of great arteries, 121
    - in right atrial extension of Wilms' tumor, 363
  - long-term follow-up of two infants with cardiac pacemaker, 921
  - multiple ventricular aneurysms in 17 year old Nigerian girl, 521
  - obstructive lesions of right heart chambers, surgery for, in infants less than 30 days old, 479
  - pediatric management in women with heart valve prosthesis during pregnancy, 802
  - percutaneous sheath cardiac catheterization in small infants, 493
  - pulmonary arterial banding in New England Regional Infant Cardiac Program, 484
  - surgery for coarctation of aorta in infants, 489
  - tricuspid atresia, clinical course in, 327
- Pentaerythritol tetranitrate, gastrointestinal absorption of, 407
- Pericardial effusion versus calcified mitral annulus, 354
- Pericarditis
  - acute suppurative amebic, 409
  - and intrapericardial bronchogenic cyst, 817
  - constrictive
    - and amyloid heart disease, 438
    - in procainamide-induced lupus erythematosus, 960
  - in airline pilots, 623
- Perivascular nerves, interruption of, and relief of symptoms in ischemic heart disease, 496
- pH and survival after surgery for obstructive lesions of the right heart chambers in infants less than 30 days old, 479
- Phentolamine and neurogenic vascular resistance in borderline hypertension, 708
- Phosphates, high energy, after coronary reperfusion, 234, 244
- Pilot incapacitation
  - (see Bethesda Conference on Cardiovascular Problems Associated with Aviation Safety)
- Polarizing solutions, potassium in, 540
- Postgraduate training of cardiologists
  - (see also Symposium on Responsible Leadership in the Training of the Cardiologists of Tomorrow)
  - community-based program, 569
  - federal legislation and, 558
  - government and, 555
  - in Canada, 560
  - institution-based program, 567
  - role of American Board of Internal Medicine in, 565
  - role of chairman of department of medicine in, 563
- Potassium chloride
  - and ventricular defibrillation, 37
  - in polarizing solutions, 540
- P-R interval in bifascicular block, 536
- Practolol and left ventricular dimensions during coronary occlusion, 179
- Precordial S-T segment mapping versus Frank vector system in acute myocardial infarction, 155
- Preexcitation, ventricular, James and Mahaim fibers in unique variety of, 880
- Pressure-volume data and ventricular diastolic compliance, 193
- Prevention of ischemic heart disease, 496
- Procainamide
  - for ventricular arrhythmias, 629
  - induced lupus erythematosus, constrictive pericarditis in, 960
- Propranolol
  - and atrioventricular nodal reentry, 286
  - and denervated transplanted human heart, 859
  - and first derivative of apex cardiogram in evaluating myocardial contractility, 873
  - and neurogenic vascular resistance in borderline hypertension, 708
  - and renin and age in essential hypertension, 653
  - for ventricular arrhythmias, 629
  - in normoreninemic essential hypertension, 716
- Pseudoxanthoma elasticum and coronary artery disease, bypass surgery for, 515
- Pulmonary arterial banding
  - before resection of coarctation of aorta in infants, 489
  - in infancy, 484
- Pulmonary embolism in airline pilots, 611
- Pulmonary stenosis
  - and tetralogy of Fallot, developmental relation between, 793
  - infundibular versus valvular, echocardiogram in, 21
  - right ventricular volume in, 67
- Pulmonary valve
  - in dextrotransposition of great arteries, 121
  - in Uhl's anomaly, 349
- Pulmonary vein atresia
  - surgery for, in infants less than 30 days old, 479
  - unilateral, diagnosis and treatment of, 969
- Purkinje fibers, digitalized, and manganese chloride and verapamil, 50
- P waves in dissimilar atrial rhythms, 91
- QRS complex after coronary occlusion and reperfusion, 225
- QRS forces, anterior, after coronary bypass surgery, 163
- Quinidine for ventricular arrhythmias, 629
- Q waves
  - after extended coronary occlusion and reperfusion, 252
  - disappearance of, after coronary bypass surgery, 889
  - during coronary reperfusion, 218
- Radioimmunoassay kits for measuring serum digoxin, 975
- Recoarctation of aorta after surgery for coarctation, 489
- Reentry, atrioventricular nodal, after atropine, 286
- Renal disease versus Wilms' tumor in right atrium, 363
- Renal stenosis, 702
- Renin
  - and age, antihypertensive beta blocking action related to, 653
  - and neurogenic vascular resistance in borderline hypertension, 708
  - and parasympathetic activity in hypertension, 675
  - in borderline hypertension, 691
- Reperfusion during acute myocardial infarction, symposium on, 211-261; 368-408
- Reviews in cardiology, 122, 274, 415, 541, 854, 981
- Roentgenogram, chest, in systolic click-late systolic murmur syndrome, 27



- Sarcoma, reticulum-cell, chemotherapy for, 357
- Scintillation camera in measurement of regional myocardial blood flow, 783
- Scoliosis  
in idiopathic mitral valve prolapse, 32  
in systolic click-late systolic murmur syndrome, 27
- Serum cholesterol in familial hyperbetalipoproteinemia, 509
- Serum enzymes  
after coronary occlusion and reperfusion, 225, 395  
coronary sinus, after coronary reperfusion, 234  
in myocardial infarction, 412, 433
- Serum lipids  
and coronary arteries after bypass surgery, 744  
in familial hyperbetalipoproteinemia, 509
- Serum triglycerides and graft patency, 413
- Shock, cardiogenic, in acute myocardial infarction  
methylprednisolone in, 539  
systemic oxygen delivery after, 148
- Shunt, systemic to pulmonary arterial, in infants less than 30 days old, 479
- Simpson's rule and right ventricular volume determinations, 67
- Sick sinus syndrome and "paradoxical" prolongation of sinus nodal recovery time after atropine in, 98
- Sinoatrial node and atropine, 281
- Sinus nodal artery in Marfan's syndrome, 315
- Sinus nodal dysfunction, pharmacologic therapy in, 98
- Sinus node in transplanted and denervated human heart, 859
- Sinus echo zones and normal sinoatrial conduction, 445
- Skeletal injury and MB creatine phosphokinase, 433
- Socialized medicine, cardiology in, 560
- Spiroglactone in normoreninemic essential hypertension, 716
- Stellate stimulation and ventricular fibrillation during coronary occlusion, 45
- Stellatectomy and ventricular fibrillation during coronary occlusion, 45
- "Stiff heart" syndrome, 438
- Straight back  
in idiopathic mitral valve prolapse, 32  
in systolic click-late systolic murmur syndrome, 27
- Stress management training and type A behavior, 269
- S-T segment  
after coronary occlusion and reperfusion, 225  
depression  
and S wave amplitude, 270  
in exercise tests of women, 169  
during angina, 723  
epicardial changes in, after coronary reperfusion, 218  
in left main coronary artery disease, 135  
mapping, epicardial, after coronary reperfusion, 218
- Subaortic stenosis, idiopathic hypertrophic, retrograde left atrial catheterization in, 62
- Supernormal phase of ventricular excitability, 292
- Surgery  
atrioventricular block within His bundle induced by, 914  
cardiac, ICHD report on optimal resources for, 836  
coronary bypass  
after acute myocardial infarction, 395  
and "angina-producing" myocardial segment, 723  
and coronary collateral circulation, 734  
contraindicated in familial type II hyperbetalipoproteinemia, 509  
disappearance of abnormal Q waves after, 889  
for coronary artery disease and pseudoxanthoma elasticum in 18 year old girl, 515  
for ischemic heart disease, 496  
for left main coronary artery disease, 136  
for variant angina pectoris, 142  
in patients over 70 years of age, 342
- Surgery  
native coronary arteries after, 748  
selection of patients for, 163  
sheep carotid arterial heterografts for, 823  
vectorcardiography after, 183  
experimental, of the cardiac orifices, Carrel and Tuffier on, 954  
for coarctation of aorta in infants, 489  
for coronary artery disease  
life units in evaluation of, 120  
selection of patients for, 225  
for Holt-Oram syndrome with ostium primum and secundum atrial septal defects, 967  
for intrapericardial bronchogenic cyst, 817  
for left ventricular fibroma, 262  
for Marfan's syndrome, 338  
for myocardial ischemia and coronary reperfusion, 218, 244, 252  
for obstructive lesions of right heart chambers in infants less than 30 days old, 479  
for tricuspid atresia, 327  
for tumor in left ventricle, 957  
noncardiac, and MB creatine phosphokinase, 433  
open heart, acupuncture anesthesia for, 411  
pacemaker implantation, medicolegal considerations, 266  
pulmonary arterial banding  
in New England Regional Infant Cardiac Program, 484  
in tricuspid atresia with diminished pulmonary blood flow, 327  
revascularization  
(see also Surgery, coronary bypass)  
after acute myocardial infarction, 395  
right atrial-pulmonary arterial anastomosis in tricuspid atresia, 327  
versus medical therapy  
for ischemic heart disease, 496  
for unstable angina pectoris, 119
- Waterston shunt in tricuspid atresia with diminished pulmonary blood flow, 327
- Sympathetic tone and ventricular fibrillation threshold during coronary occlusion, 45
- Symposium on Hypertension, 651-721  
Antihypertensive beta blocking action as related to renin and age: a pharmacologic tool to identify pathogenetic mechanisms in essential hypertension, 653  
Autonomic nervous cardiovascular regulation in borderline hypertension, 685  
Hemodynamic lesions in hypertension, 670  
Hypertension with renal arterial stenosis: humoral, hemodynamic and histopathologic factors, 702  
Inpatient comparison of treatment with chlorthalidone, spironolactone and propranolol in normoreninemic essential hypertension, 716  
Introduction and overview, 651  
Relation of renin status to neurogenic vascular resistance in borderline hypertension, 708  
Systolic hypertension: nonhomogeneous diseases, 697
- Symposium on Reperfusion During Acute Myocardial Infarction, Part I, 211-261; Part II, 368-408  
Alterations in energy metabolism and ultrastructure upon reperfusion of the ischemic myocardium after coronary occlusion, 234  
Alterations in myocardial hydrogen ion concentration after temporary coronary occlusion: a sign of irreversible cell damage, 214  
Consequences of coronary arterial occlusion on remote myocardium: effects of occlusion and reperfusion, 385  
Contractile and biochemical effects of coronary reperfusion after extended periods of coronary occlusion, 244



- Symposium on Reperfusion During Acute Myocardial Infarction, Part I, 211-261; Part II, 368-408
- Experimental coronary arterial occlusion and release. Effects on enzymes, electrocardiograms, myocardial contractility and reactive hyperemia, 225
- Introduction, 211
- Maximal revascularization (reperfusion) in intact conscious dogs after 2 to 5 hours of coronary occlusion, 252
- Mitochondrial function, oxygen extraction, epicardial S-T segment changes and tritiated oxygen distribution after reperfusion of ischemic myocardium, 218
- Myocardial revascularization after acute infarction, 395
- Revascularization after 3 hours of coronary arterial occlusion: effects on regional cardiac metabolic function and infarct size, 368
- Symposium on Responsible Leadership in the Training of the Cardiologists of Tomorrow, 547-572
- Cardiologic manpower resources and their distribution: a challenge for the future, 550
- Cardiology in a system of socialized medicine: Canadian experience, 560
- Discussion of previous papers, 571
- The government's concerns regarding postgraduate training and health care delivery, 555
- Introduction, 547
- The objective of a current cardiology training program: community-based, 569
- The objective of a current cardiology training program: institution-based, 567
- Pending federal legislation and postgraduate training, 558
- The responsible role of a chairman of the department of medicine in postgraduate training, 563
- The role of the American Board of Internal Medicine in postgraduate training, 565
- Systolic click-late systolic murmur syndrome, radiographic appearance of thorax in, 27, 32
- Systolic time intervals and first derivative of apex cardiogram in evaluating myocardial contractility, 873
- Tachyarrhythmia after atropine in myocardial infarction, 281
- Tachycardia
- atrioventricular junctional, atrioventricular block after, 807
- atrioventricular nodal reentrant, after atropine, 286
- paroxysmal, in Ehlers-Danlos syndrome, 524
- sinus and atrioventricular nodal reentrant, in same patient, 810
- supraventricular, optimal dose of digitalis in, 459
- Tetralogy of Fallot
- and pulmonary stenosis, developmental relation between, 793
- and transposition of great vessels, developmental relation between, 793
- and ventricular septal defect, developmental relation between, 793
- echocardiography in, 908
- right ventricular volume in, 67
- surgery for, in infants less than 30 days old, 479
- Thorax, skeletal abnormalities of,
- in idiopathic mitral valve prolapse, 32
- in systolic click-late systolic murmur syndrome, 27
- Threshold tracking pacemaker, 322
- Thrombosis, venous or arterial, in airline pilots, 611
- Tissue injury, and MB creatine phosphokinase, 433
- Training of cardiologists
- (see Symposium on Responsible Leadership in the Training of the Cardiologists of Tomorrow)
- Transposition of great arteries
- and tetralogy of Fallot, developmental relation between, 793
- dextro-
- echocardiogram in, 121
- pulmonary arterial banding for, 484
- surgery for, in infants less than 30 days old, 479
- Tricuspid atresia
- clinical course in 100 patients with, 327
- surgery for, in infants less than 30 days old, 479
- Tuffier and Carrel on experimental surgery of the cardiac orifices, 954
- Tumors
- cardiac, chemotherapy for, 357
- in left ventricle, echocardiogram in, 957
- Wilms', echocardiographic diagnosis of right atrial extension of, 363
- Type A behavior in cardiac disease, therapy for, 269
- Uhl's anomaly, echocardiography in, 349
- Ultrasonography, compound-B, and ventricular volume measurement, 114
- Ultrasound
- (see also Echocardiography)
- Doppler, and phasic left ventricular blood velocity, 309
- Valve experiments by Cushing and Branch, 506
- Valve prostheses, cardiovascular management of pregnant women with, 802
- Vectorcardiogram
- after coronary bypass surgery, 163
- and S-T segment elevation in acute myocardial infarction, 155
- computer analysis of, 76
- Vectorcardiography, clinical advances in, 76
- Vein grafts, saphenous, patency of, and native coronary circulation, 739, 849
- Venous thrombosis in airline pilots, 611
- Ventricle
- left
- dyskinesia of, 978
- in atrial septal defect, 302
- single, surgery for, in infants less than 30 days old, 479
- Ventricular asynergy, left, in mitral valve prolapse-click syndrome, 110
- Ventricular blood flow velocity alternans, 309
- Ventricular compliance, left, during diastole, 193
- Ventricular dimensions
- and prazosin during experimental coronary occlusion, 179
- in atrial septal defect, 302
- internal, in acute myocardial infarction, 1
- Ventricular excitability, quantitative study of supernormal phase of, 292
- Ventricular fibrillation
- terminated by depolarizing critical amount of myocardium, 37
- threshold, influence of sympathetic tone on, 45
- vulnerability to, during acute coronary occlusion and release, 776
- Ventricular fibroma, intramural, partial excision of, 262
- Ventricular function
- abnormal, echocardiogram in, 11
- after coronary bypass surgery, 723
- after coronary occlusion and reperfusion, 234, 368, 395
- and graded reductions in regional coronary perfusion, 185
- in amyloid heart disease, 438
- in atrial septal defect, 302
- in ischemic heart disease, 496
- sequential studies of, 409

# SUBJECT INDEX

- Ventricular hypertrophy
  - left, and mortality in left main coronary artery disease, 131
  - vectorcardiogram in, 76
- Ventricular length, regional, after nitroglycerin in experimental myocardial infarction, 453
- Ventricular outflow tract right, and echocardiogram in tetralogy of Fallot, 908
- Ventricular preexcitation, James and Mahaim fibers in unique variety of, 880
- Ventricular septal defect
  - and aneurysms of interventricular septum, echocardiogram in, 797
  - and tetralogy of Fallot, developmental relation between, 793
  - echocardiography in, 346
  - pulmonary arterial banding for, 484
- Ventricular septum and echocardiogram in tetralogy of Fallot, 908
- Ventricular tension, regional, after nitroglycerin in experimental myocardial infarction, 453
- Ventricular tumor, echocardiogram in, 957
- Ventricular volume
  - after nitroglycerin, 419, 426
  - measurement by echocardiogram, 114
  - right, in congenital heart disease, 67
- Ventricular wall dynamics, regional, and sublingual nitroglycerin, 419
- Ventricular wall motion and prognosis in acute myocardial infarction, 1
- Ventriculogram
  - in atrial septal defect, 302
  - in left main coronary artery disease, 131
  - in mitral valve prolapse-click syndrome, 110
- Ventriculography, dynamic, and ejection fraction, 529
- Verapamil and automaticity of digitalized Purkinje fibers, 50
- Wedensky facilitation and supernormal phase of ventricular excitability, 292
- Wenckebach periodicity, alternating, electrophysiologic study of, 757
- Wilms' tumor, echocardiographic diagnosis of right atrial extension of, 363
- Wolff-Parkinson-White syndrome and unique variety of ventricular preexcitation, 880
- Women and criteria for exercise testing, 169
- Xanthomas in familial hyperbetalipoproteinemia, 509
- Xenon-133 in measurement of regional myocardial blood flow, 783

